

EDITORIALS

Educational Integration of Practitioner and Hospital

THE experimental two-year medical care project of the Vladeck Houses on the Lower East Side of New York, financed in part by the New York Foundation, will be watched with interest by organized medicine. About 6,200 wage-earning persons will participate, pre-paying three dollars a year a person or twelve dollars a family of four or more, to be collected monthly from the rents paid (\$4.80 to \$7.60 a week). There will be a wide range of choice from a large panel of volunteering physicians. A medical director, a supervising board, an executive secretary and clerical help will administer the plan, and two hospitals in the district will provide the free hospital and out-patient care necessitated by the fact that all tenants will come within the income range calling for such care.

To us the most interesting feature of the plan is the functional integration of practitioner and hospital, since the doctor gets "an opportunity to use the laboratory services of the two hospitals associated with



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the plan, to follow the patient into the hospital, to have the benefit of charts, analyses worked up by the hospital, and of consultation in difficult cases. He will receive a complete report from the hospital when his patient is dismissed after hospitalization."

Medical Advertising

THE doctors representing organized medicine in Salina County, Kansas, are conducting a publicity campaign. They are running paid-for advertisements in newspapers, giving truthful and accurate medical information in order to counteract the effect of years of silence upon the public—effect which has manifested itself in the mushroom growth of preposterous cults and other means of self-abuse on the part of that public.

For example, what medicine has accomplished in the case of such diseases as typhoid fever, diphtheria, yellow fever, bubonic plague and malaria is set forth in carefully phrased, thought-compelling advertisements. People are informed as to what medicine has done, what it is doing,

and what it plans to do.

This group realizes that this campaign, to be successful, must cover the entire nation and must be continuous. It is acting as an experimental and inspirational vanguard.

In an address before the Oklahoma Press Association explaining the plan, Dr. E. G. Padfield, speaking for the Salina group, recently said that "In the most ethical manner possible we have opportunity to give constant, truthful information of tremendous value to the public. In return, the public would turn to the medical doctor as it did in the days of the fine family doctor of tradition. The newspaper profession would increase its revenues thousands of dollars, the medical profession would profit financially from increased prestige; but even more important, we as doctors would have the friendship and support of the most important thing in public life today—the newspaper."

Appeasement Is Not Working Well

WHAT Professor Grover F. Powers, of the Yale Medical School (*Yale J. Biol. and Med.* 12:1-22, October, 1939), has to say about the increasing mental deficiency and other subnormalities among the children now being born into the world serves to illuminate the question of the differential rates of adoption of contraception to which we alluded in an editorial in our November, 1940, issue titled "Race Building in the Democracies." We advocated a larger and better population based upon encouragement of the genetically fit to reproduce, so as to set in motion a rising tide of superiority, which is not the case now, to put it mildly. Now, through well known measures, we are reducing the number of the fit, with appalling consequences. This is because of attempted adjustment to (surrender to) vicious inequities, social and economic.

The following paragraphs are quoted from Dr. Powers' paper:

By our advancement in the control of disease we have saved many lives and in many instances we ask ourselves if it would not have been better for the world if the child had died. Are we not saving many who are feeble-minded, emotionally unbalanced, diabetic, cretinous, crippled, or otherwise apparently hopelessly handicapped or afflicted? Are we not preventing the beneficent operation of

the law of the survival of the fittest? My own answer is that the same procedures which save the unfit save the fit and that science must continuously seek new truth and effective means of its application, let the results be what they may. Fielding Garrison said: "A high infant mortality means sacrifice of the unfortunate rather than the unfit who must be eliminated by birth, not death." We pediatricians have paid much attention to preventing elimination by death; to contribute studies, interest, and support toward the promotion of "elimination by birth" may be increasingly one of our functions in the future.

Granted that preventive pediatrics is bringing about an increase in the number of survivals among the feeble-minded and other sub-normal children, these patients have always been with us and have constituted a very large portion of the pediatrician's clientele. The subject is drab and distasteful and has received far too little thought, interest, and support. As a result, we are reaping the fruits of inadequate concern in retardation of educational programs, antisocial conduct, and crime in our communities, and serious behavior problems among the relatives of the defectives as well as in the patients themselves. Our machinery for diagnosis—especially as to intelligence and social ratings, and encephalography—has advanced in the past several decades but prevention and effective care and training have not kept pace. The pediatrician usually is the first to diagnose these children and he must concern himself in the future with the genetic and eugenic aspects of the matter looking, in the long view, to prevention of those cases due to faulty germ plasma. He must concern himself, on the one hand, with adequate and properly equipped institutions furnishing custodial care for idiots and imbeciles, and on the other, with training facilities for the higher types whereby they may be given occupational technics to the end that they may be useful members of their communities and not continue as helpless and sometimes vicious parasites on society. Such institutions should be vital centers of research in educational, psychological, and medical fields. Recent chemical studies have opened up a vista of the possibilities for this technic of investigation.

And lastly, the pediatrician must interest himself in the public school as regards this subject. He has had much to say about school health from the physical side; in the future he must have something to say about the emotional and educational problems which arise from the presence there of subnormal children. They are a serious hand/cap to normal children and themselves present behavior problems when attempts are made to force upon them an educational mould which they are not equipped to fit.

How large the problem of mental deficiency is no one can say, but from a survey of the situation during the past three years I have been forced to the conclusion that with its widespread ramifications the matter is one of major pediatric and educational importance.

THROUGH the measures which are reducing the numbers of the genetically fit the Moloch of monopoly, to name just one of many evil things, is appeased. It is, indeed, only through the dumb and cowardly expedient of appeasement that a system in which only a privileged few own most of the national economy can be made to function.

Well and good; but the appeasers insist that their methods possess an inherent and enduring virtue. This fiction they have come to believe in through a habit of

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Oxygen WANT

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THE very existence of man is dependent upon a constant supply of oxygen to the tissues to meet the energy demands of his vital organs. Unless death results from conflagration or explosion, man dies because of oxygen want in his tissues usually brought about by the failure of one of the mechanisms upon which this supply is dependent. The magnitude of the demand is well known; it varies from 250 Ml./minute at rest to levels of 3 or 4 liters/minute under conditions of maximal activity and in fever and disease basal demands may be greatly increased above normal levels. Our purpose is to discuss briefly the physiological mechanisms concerned in oxygen want and to correlate them.

(A) Control of Respiration

ANY consideration of oxygen want in tissues must of necessity start with the mechanism for control of respiration. Oxygen want may result from disturbances in respiration and in turn respiration itself will be markedly influenced by anoxia.

(1) Respiratory Center

The actual anatomic center is an extremely complex unit distributed from the medulla as far cephalad as the pons. It is

the principal effector center. Countless impulses per second arrive from the lungs, muscles, joints, tendons, the carotid and aortic bodies and the carotid sinus. They are relayed through the fasciculus solitarius, the cuneate and gracile nuclei, and the reticular nuclei and reticular formation, the efferent path being through the reticulospinal tract.

Much information is available on the location and neuro-anatomy of this center and great advances have been made in the study of the mode of operation of chemical and nervous mechanisms controlling it. However, our knowledge of the coordination of these mechanisms remains far from complete. At present it is perhaps wiser to consider respiration as but one aspect of the coordinated and maintained phenomena called life. It is a fundamental physiological process and not a matter of simple response to efferent impulses from an autonomic medullary center. Both the normal resting and pathologic rhythms are the result of the interaction of a number of elements any one of which may be dominant at the moment in influencing the mechanism.

(2) Chemical Control

The chemical regulation of the center is primarily mediated through the tension of

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carbon dioxide in the blood and the related acidity of the blood. The pH of the blood, sub-oxidative products and other factors more or less closely related to the tension of carbon dioxide may also influence the center, particularly in those instances where its normal activity is depressed either by excess of carbon dioxide or by the depressant action of drugs and chemicals. The partial pressure of oxygen also may exert great influence upon respiration in cases of deficiency, not only by directly affecting the operation and tone of the center itself but also by the effect of anoxemia on the carotid and aortic bodies, both of which have direct nervous connections with the center.

(3) Nervous Control

The nervous system through its extensive connections exerts a variety of effects upon respiration.

(a) One of the most important of these is the connection through the vagus nerve which carries both afferent and efferent fibers. While the vagus function is of paramount importance in pneumonia and lung disease, the operation of the vagus reflexes following inhalation of irritants, gases and certain anesthetics may result in shallow respiration with incomplete ventilation. Through the vagus pathways are mediated the Hering-Breuer reflex and the changes in respiration which accompany any imposed increase in expiratory effort.

(b) The carotid and aortic bodies are important factors in maintaining the normal regular rhythm or respiration. In states of oxygen want their role becomes of increased importance because of the fact that the carotid- and aortic-body reflexes may be the only mechanism for maintaining respiration. Seemingly they are also sensitive to abnormal increases in tension of carbon dioxide. In anesthesia these reflexes from the carotid body and the aorta may at times give rise to apparently anomalous respiratory behavior. The carotid bodies are most sensitive to oxygen want and furthermore they are more resistant to the action of narcotics, drugs or anesthetics than is the respiratory center itself. Under certain circumstances in subjects in deep

anesthesia, the respiratory center may be so depressed as to be insensitive to the usual chemical stimuli (as evidenced by the lack of reaction to a high tension of carbon dioxide), yet breathing will continue, the stimulus arising entirely from the reaction of the carotid and aortic bodies to oxygen want. As a result, in states of anesthesia where the respiratory center is greatly depressed and anoxemia is present, one may find that administration of high concentrations of oxygen leads to further depression in breathing or complete apnea, this being due to the removal of the anoxemic stimulus to the carotid bodies. In these situations one might easily get the impression that administration of high concentrations of oxygen is contraindicated; however, breathing will be resumed and administration of oxygen should be continued. The breathing will begin by virtue of the action of carbon dioxide either upon the carotid and aortic bodies or upon the respiratory center itself, the oxygen supply to the latter having now improved.

(c) Sensory stimuli may greatly influence respiration, their effect being generally in the direction of heightening the rhythm after, perhaps, an initial brief suppression. Afferent fibers from muscles are normally of considerable importance in the regular control of respiration, and interference with these impulses by surgical procedures and the like is one factor which leads to disturbance of the normal rhythm in anesthesia.

(d) Reflex effects upon respiration from handling of abdominal viscera, dilatation of the sphincter or vomiting are known to interfere with the normal rhythm in surgical procedures.

(e) Other factors of importance in influencing the normal rhythm of respiration are those connected with consciously perceived stimuli and voluntary control, but neither of these operates in anesthesia.

(B) Causes of Oxygen Want

OXYGEN want with relative tissue asphyxia may come about through the failure of any one of a number of mech-

anisms designed to maintain an adequate oxygen supply to the tissues.

(1) External Causes

There must first of all be an adequate partial pressure of oxygen in the inspired air. Conditions of low general barometric pressure which cause a reduction in the partial pressure of oxygen do not play a great role in the present discussion, and under normal conditions our only concern is to have an adequate percentage of oxygen in the inspired air. It is the feeling of some workers that concentrations of oxygen in anesthesia mixtures in excess of normal are disadvantageous. In any event the concentration in anesthesia should not be allowed to go below 15 per cent (at 760 mm.). Draper's experiments in this connection are of interest. Toxic doses of CHCl_3 given rapidly in oxygen to 200 dogs caused primary circulatory collapse in only one instance, the low incidence being attributed to the protective action of oxygen in high concentrations.

(2) Internal Causes

The state of the respiratory tract itself must be such as to permit unimpeded ventilation.

(a) Respiratory Tract

The airway must be free. Excesses of exudate and laryngeal spasm should be dealt with promptly. Anoxia may result from protracted excitement. This should be relieved not by increasing the dosage but by freeing the airway.

(b) Lungs

Inadequate ventilation is a frequent cause of oxygen want. Poor ventilation may come about from a variety of causes. Irritability of the lungs with consequent rapid shallow breathing is not uncommon in anesthesia. Furthermore, anoxemia can result from disturbance in normal respiratory rhythm if the chest is held in the expanded position. In these cases, although the tidal air is of normal volume, the relative dead-air space is greatly increased and the actual effective pulmonary ventilation is correspondingly reduced. Mechanical factors of position, pressure from abdominal distention and deformi-

ties all tend to interfere with normal ventilation, with resultant anoxemia.

Conditions within the lung itself, such as atelectasis, the presence of pneumothorax or marked emphysema may so interfere with normal diffusion that the effective ventilation is inadequate.

The transport or diffusion of oxygen across the pulmonary epithelium must be free or anoxemia will result, no matter how effective the ventilation or what the concentration of oxygen introduced into the breathing mixture. In many disease states there is faulty aeration of blood passing through what appear to be normal lungs and in some cases this may be attributed to failure of the lung itself to permit adequate, rapid diffusion. The extremes of this condition are seen in pneumonia, in general pulmonary edema, and in pulmonary fibrosis. There is some evidence that certain anesthetics, particularly diethyl ether, may themselves interfere with the diffusion of oxygen through the pulmonary epithelium, this effect being attributed to the presence of focal areas of edema and some interference with the activity of the pulmonary epithelium as a whole.

The reduction in vital capacity that occurs in decompensated heart disease with associated engorgement of pulmonary capillaries and reduction in alveolar volume not only reduces the ventilation but also interferes with normal diffusion.

Experimental evidence indicates that an oxygen saturation of hemoglobin less than 94 per cent is insufficient for optimal activity and that patients with an oxygen saturation of from 90 to 94 per cent are really in a state of relative anoxemia. Reduction in the oxygen-carrying power of blood is a frequent cause of tissue anoxia in both ambulatory and anesthetized patients.

First of all, there may be a deficiency in gross circulation. The limited volume of circulation with its fixed carrying power for oxygen may be inadequate to meet the demands of the tissues.

There may be reduction in the amount of hemoglobin, as the result either of an inadequate number of cells, a low concen-

tration of hemoglobin within the cells, or a deficiency in the total blood volume; and we may add to this, conditions in which there is a reduction of the "effective" blood volume, that is to say, conditions in which the total blood volume is adequate but, because of local stasis in the abdominal viscera or in the lungs, the actual volume circulating to other parts may be inadequate.

In high spinal or subarachnoid anesthesia there tends to be a higher oxygen saturation of the arterial blood, which is due to a reduction in the rate of pulmonary circulation; there is, however, a tendency to a decrease in the oxygen content of venous blood, which results from stasis and from changes similar to those occurring in shock, the net result being a stagnant anoxia. In some cases the oxygen content of venous blood may be reduced to 6.5 or 7 per cent. This stasis is due in large part to vasodilatation plus the result of paralysis of the voluntary muscles with consequent reduced negative pressure in the chest, and to depressed cardiac activity. A fall of 30 per cent in blood pressure will cause an inadequate return of venous blood to the right heart with a corresponding decreased cardiac output. As the anoxia which results is essentially of a stagnant type with an increased arteriovenous difference, it is perhaps best treated by small doses of vasoconstrictor drugs and the more judicious use of the anaesthetic agent to avoid excessive fall in blood pressure. However, in view of the work of Landis on the effect of anoxia in increasing capillary permeability, administration of oxygen would appear to be indicated. The shock-producing tendencies of certain anesthetics are well known. Dale, for example, caused shock in anesthetized cats with one-tenth the dose of histamine required for non-anesthetized animals. Whether or not these observations may with propriety be taken as evidence for the value of oxygen administration in anesthesia, they leave little doubt of the necessity for an adequate oxygen supply.

Alteration of the hemoglobin by chemicals or toxins may give rise to anoxemia by interference either with the carrying

power of the hemoglobin or with the dissociation of oxygen from hemoglobin. The interference by carbon monoxide and nitro bodies is well known. Not so well appreciated are the effects of acidosis, for example, which is known to accompany diethyl ether anesthesia and may depress the pH of the blood sufficiently to have an adverse effect upon the dissociation of oxyhemoglobin. In addition, the presence of an adequate partial pressure of carbon dioxide is necessary for the effective dissociation of oxyhemoglobin, and in patients who hyperventilate with pronounced fall in the carbon-dioxide tension in the blood, the resulting change in the oxyhemoglobin dissociation curves may be so great that the exchange of oxygen in the tissues will be interfered with, and will be depressed even though the oxygen content of the hemoglobin itself is at or near normal values. In this connection it is well to point out that the oxygen saturation of blood may not always be taken as a sufficient index of the state of the tissues in respect to oxygen supply.

Interference with utilization of oxygen by tissues may lead to profound tissue asphyxia. The best example of this is the action of cyanides, which inhibit the utilization of oxygen by tissues so that asphyxia results even though the oxygen transport mechanism may be functioning adequately. Too little is known about the histotoxic effects of many anesthetics or whether or not they may interfere directly with the oxygen utilization of tissues. In the case of diethyl ether, at least, there is some evidence that such an interference does occur.

(C) Signs of Oxygen Want

Two of the earlier signs of oxygen want are increase in the circulatory rate and minute volume and an increase in respiration. It is generally held that the respiration is the best guide in anesthesia and that respiratory signs are the best indication of overdosage. Their order of appearance is as follows: 1. increase in amplitude, 2. increase in rate, 3. irregularities of rhythm, followed by 4. cyanosis, dilatation of the pupils, sudden pallor, etc. However, these changes may all occur in anoxia

so that in states of anesthesia, changes in respiration may be an uncertain guide because of the action of anesthetics upon the respiratory center. Moreover, in cases in which overventilation occurs from other causes such as lung irritation or extraneous stimuli, the ensuing depletion of the carbon dioxide in the blood with consequent lowering of partial pressure may invalidate this sign. Some changes in respiration are generally in evidence, however, if a state of anoxia exists.

The presence of anoxemia is usually indicated by cyanosis, but this phenomenon is due to the presence of a certain quantity of reduced hemoglobin and not to the relative proportion of reduced to oxygenated hemoglobin. About 5 gm. of reduced hemoglobin is necessary to produce cyanosis. Thus in dehydration and polyglobulia this sign might appear as the result of quite small alterations in oxygen saturation. On the other hand, in anemia or in instances where the blood concentration is reduced by intravenous administration of fluids, cyanosis may appear only with advanced oxygen deficiency. Cyanosis may therefore be taken simply as uncertain evidence of the state of the blood in reference to oxygenation. Even if this change is not present it does not necessarily follow that the tissues are receiving an adequate supply of oxygen or that it is being properly utilized by them.

The central-nervous-system symptoms which are so characteristic of anoxemia in nonanesthetized patients are of little value in determining the degree of anoxemia in anesthesia. However, the occurrence of muscle spasms, particularly of the recti of the eyes, or the onset of convulsive vomiting or generalized twitching should be taken as a warning of serious anoxia of the central nervous system.

(D) Results of Oxygen Want

The results of prolonged oxygen want may be serious. Without considering in detail the lesions which may occur, the subjection of the patient to anoxia is in any case an unnecessary additional anesthetic trauma. The effect of the anesthetics on the tissues themselves can not be avoided, but the effects of anoxia can be

eliminated readily in most instances by the addition of an adequate amount of oxygen.

(E) Treatment

Treatment is designed to provide an adequate supply of oxygen to the tissues and in most instances this may be facilitated by increasing the partial pressure of oxygen in the inspired air. In our experience the administration of concentrations of oxygen in excess of normal has been a safe procedure. It is the opinion of some workers, however, that in certain cases disturbances to the physiologic mechanism follow administration of an excessive partial pressure of oxygen. No explanation of this action has been offered. The increasing use of relatively potent anesthetic agents such as cyclopropane has in many cases led to the use of oxygen as the sole diluent. Whether or not the breathing of high partial pressures of oxygen for brief periods of time is attended by danger in certain individuals is a question which definitely demands further physiological and clinical study. Since the original observations of Paul Bert, it has been shown repeatedly that high partial pressures of oxygen are harmful or fatal to experimental animals. Patches of atelectasis and edema have been noted in dogs and physiological disturbances in man.

Certain safe limits have been established for man, however. Boothby gave 100 per cent oxygen to over 100 patients, for not more than 48 hours in most instances, without observing the slightest evidence of pulmonary irritation. Boland, using 100 per cent oxygen for relief of anginal pain and the pain of myocardial infarction, observed no lung irritation when the treatment was interrupted for 15 minutes every 3-4 hours. Barach considers it safe to use 100 per cent oxygen for 48 hours, or to alternate every 12 hours with 50-60 per cent oxygen when treatment has to be continued for longer periods. It would appear, therefore, that if these limits of concentration are not exceeded, no danger is to be anticipated, particularly in the short period of clinical administration of anesthetics.

TREATMENT OF THE MALE PATIENT WITH

Later Gonorrhea

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THE meaning of the term "later gonorrhea" assigned to us as the subject for discussion is not quite clear to the writer. I suppose we may assume that the patient has passed the earlier, more acute stage, of the disease and with a definite measure of subsidence of active local symptoms and signs. After several weeks or even months of the disease, in certain cases, some degree of urethral discharge may persist, manifest throughout a 24-hour period or perhaps only as a so-called "morning drop." The later stage of disease might also include a group who have had one or more acute relapses of urethral discharge some time following the first attack, although the symptoms had completely or partially subsided in the interim. The persistence of an itching urethra and shreddy urine may be the only remaining symptom.

AS an introduction to any plan of therapy let it be said that there is no concrete scheme of management which can be outlined to the physician that is applicable to all patients. Individualization of each case is a prerequisite to successful results.

Read May 4, 1940 before the Kings County Medical Society as part of a series of Symposium Lectures on Venereal Disease.

It hardly seems necessary to remind the doctor that the use of alcoholic drinks of any kind, highly seasoned foods and spices, and sexual excitement are prohibited. As much physical rest and sleep as possible, and regular habits of life are advisable. Precautionary measures should be taken for avoidance of eye infection as well as protection of others from infection through clothing, underwear, and linen. Sanitary bags should be worn until cessation of all discharge.

From the very advent of the sulfanilamide treatment about three years ago, we have feared the dangers of physicians depending largely or entirely on drug therapy for clinical cures and the neglect of the important "mechanical" features of diagnosis and treatment, after active symptoms have disappeared. There is grave danger in assuming a state of cure before it is actually accomplished.

THE advent of the sulfonamides, one of the greatest contributions to medicine in the past twenty-five years (neoprontosil, sulfanilamide, and sulfapyridine), has largely revolutionized the treatment in that a very large percentage of people are cured within periods of time

far shorter than could ever have been accomplished under the older methods of therapy. Complete disappearance of all symptoms in seven to ten days of the intensive treatment is common. Claims of cure by this method vary all the way from 40 to 98 per cent according to different authors. Time does not afford a consideration of the dangers of untoward effect in certain persons where goodly doses have caused toxic damage to the blood, to the skin, and other organs of the body. Among the toxic symptoms and conditions which may occur are: cyanosis, nausea, vomiting, dyspnea, anorexia, headache, fever, malaise, hematuria, urinary gravel and calculi (after sulfapyridine), skin eruptions, hepatitis, anemia, and granulocytopenia. As you are aware, the medical literature has been replete with case reports and experimental work revealing the poisonous and dangerous effects of the drugs.

Perhaps the ideal method of treating all gonorrhea is in the hospital where large doses of sulfanilamide or sulfapyridine may be safely employed in the majority of cases, and where constant supervision and laboratory tests are always available. Inasmuch as the individual fears the loss of employment, revelation of the nature of his disease, and also his inability financially to afford hospital expense, most persons consult physicians for office treatment. Moreover, there is no form of health insurance for the so-called social diseases. The physician, therefore, cannot safely practice the intensive form of drug therapy if his patient must remain ambulatory.

ON the first visit the doctor makes a urethral smear, obtaining the material from within the meatus by the use of a wire loop or the corner of a glass slide, strictly avoiding contamination of the smear with the many bacteria which are always present on the glans. When the smear is made on the face of a slide it should be allowed to dry. The habit of making smears with the face of two slides stuck together is unsatisfactory. Treatment should never be undertaken until every effort has been made to obtain satisfactory microscopic demonstration of bacteria on the stained slide. Where no

urethral smear is obtainable during the day, the patient may be precisely instructed to make a proper urethral smear of the "morning drop." This may be repeated for evidence of gonococci. Certain patients have pus and shreds in the urine without urethral discharge sufficient to make a smear.

The 2-glass test then follows the making of the smear. For this, we recommend cylindrical hydrometer jars, with broad base, measuring 6 inches in height and $1\frac{3}{8}$ inches in diameter. The amount of pus present is thus revealed, whether present in the first, or in both glasses as in posterior urethritis. There is no better way to follow the progress of one under treatment than by the 2-glass test at each visit, having the patient retain the urine for two to three hours or longer preceding each visit.

No catheters or instruments of any kind should be passed into the urethra until the first urine becomes clear or clear with shreds for a period of six to seven days. This may avoid complications or acute exacerbation. Some urologists prefer to delay the use of urethral irrigations or injections at the office for a period of ten days after onset of the disease, or after ten days of an acute exacerbation of the chronic stage. Light prostatic massage may be employed twice a week when some pus is still present in the urine, if discharge is not active and the gland is not tender.

WITH regard to the use of sulfanilamide, we begin at the outset with five grains three times a day to ascertain the tolerance of the patient to the drug, gradually increasing the dose. We rarely give more than 30 to 40 grains per day (in exceptional cases 60 grains a day), warning the patient fully of the possible "toxic" effects, and advising him to discontinue it himself if untoward symptoms arise. It has been noted by a number of writers that, in certain cases, the drug appears to interfere with the immunity-defense mechanism of the body against gonococci, also that the system may become sulfanilamide resistant. Others also have noted that as the disease continues the organism seems to become more amenable to the drug. We commend a review of

the work of Van Slyke and Mahoney¹, who in studying 342 cases found the highest percentage of cures (96.1 per cent) in a group where intensive sulfanilamide was withheld until the twenty-first day of the disease.

When sulfanilamide fails in its effect it often fails completely. In certain of these cases we have found that sulfapyridine $\frac{1}{2}$ gram 3 to 4 times a day will prove very effective. Here again the risk of larger doses in producing toxic symptoms in the ambulatory patient may be even greater than with sulfanilamide. Sulfanilyl sulfanilamide, a newer derivative, has been employed by a number of recognized clinicians with definitely greater success than with the other preparations, even where sulfanilamide itself had not proven efficient. The newer sulfathiazole is now undergoing a period of trial in infections of the genito-urinary tract and may prove very efficient and less toxic in its effect. Neoprontosil, while usually not so satisfactory in inhibiting gonococci, is generally well tolerated by the average patient, even those unable to take any amount of sulfanilamide.

DURING the stage of active discharge $1\frac{1}{2}$ to 2 drachms of 0.5 per cent aqueous solution of silver picrate injected into the anterior urethra twice a week may be helpful in destroying the organisms. This is retained for about five minutes. We have used this to advantage during the past year following the technic and investigations of Knight and Shelanski² published in March, 1939. We do not recommend injections of the urethra by the patient himself for, at least, the first ten days, and then, if used, we recommend mild solutions such as $7\frac{1}{2}$ per cent silver nucleinate, silver-protein, or neo-silvol, instructing the patient in their proper use. At this stage there is no objection to gentle irrigation of the urethra, at each office visit, with a pint of 1 to 5000 solution of neutral acriflavine or potassium permanganate. The physician may continue and vary the above injection or irrigation treatments of his own, according to the best results obtained in the given patient. Generally,

the use of local treatment in addition to sulfonamide therapy may be expected to shorten the course of the disease.

If the first urine glass is clear with shreds for six or eight days or more, a prostatic smear is made by gentle but thorough massage of the prostate. Prostatic smears are delicate and when stained should only be washed by dipping once or twice in a container of water. The slides should never be heated to a degree of heat that is greater than the finger can comfortably touch. Repeated prostatic smears which reveal no pus usually indicate absence of infection. Occasionally prostatic fluid for examination cannot be obtained from the meatus by direct smear. This is due to reflex cut-off muscle spasm. One, therefore, obtains the expression-urine containing the fluid by the passage of a catheter or by urination. The perfected method of culture for gonococci in most large hospitals, using "chocolate" (cooked blood to destroy antigen) agar and exposed to 10 per cent CO_2 , has made the growth of the organism relatively easy. The physician would do well to avail himself of this method in making prostatic smears and cultures. Some have recommended that, to be safe in determining cure, it is advisable to have six negative cultures, one a week for three weeks and one a month for three months.

AFTER the urethral smear is free of gonococci, or if discharge has completely subsided, a provocative test by the use of the passage of a fairly large sound with light massage along the urethra at the same time is in order. One may also try the provocative anterior urethral injection for four to five minutes of two drachms of 1 to 500 silver nitrate solution at another sitting. If the first urine glass is shreddy, a thorough inspection of the urethra with the endoscope is advisable to search for any infected urethral glands. Involved urethral glands require wide dilation of the urethra with large sounds or the Kollmann dilator followed by antiseptic injections. In all patients with a history of chronic infection, or previous acute

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CLINICAL NOTES

I. LEFT-SIDED COLON

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THE anomaly of non-rotation of the colon is not associated with transposition of the thorax.¹ The frequency of non-rotation according to Kantor² was 0.2 per cent in a series of 4,000 cases. The clinical importance is the possibility of left-sided appendicitis being mistaken for diverticulitis. As diverticulitis is treated by non-surgical measures, not recognizing a left-sided appendicitis might easily become serious. Mayo³ reported six cases in 1911. Smith⁴ found five in a series of 1,050 autopsies. The case is an anomaly of embryological development.⁵ If the small intestine re-enters the abdominal cavity first, the normal relations result, but if the distal or colon portion enters first, a different condition results. As there is a pre-arterial and a post-arterial mesentery, either the small intestine must pass into the abdomen on the right side if it goes in first, or if the colon enters first, due to the hinge-like action of the mesentery as it folds at the line of the superior mesenteric artery, non-rotation occurs. Therefore, there is no condition of partial rotation, the so-called high cecum being either an arrested development, faulty descent or adhesion of the

cecum. Rotation is a process completed before the eleventh week and occurs, if the small intestine enters the abdominal cavity first, by the consequent rotation of the mesentery at the superior mesenteric artery.

IN an embryo of 5 mm., a constriction from the yolk-sac, anterior to the yolk-sac, can be recognized as the stomach and a portion posterior as the intestine. At first, the stomach is a simple enlargement and the intestine has no coils, but as later the digestive track grows longer, a coiling of the intestine is necessary.

As the intestine develops, it becomes a loop opposite the point of connection with the yolk-stalk, which projects anteriorly into the portion of the coelomic cavity which is contained within the umbilical cord and becomes twisted so that its lower portion lies to the left and above the upper one,⁶ and is thrown into numerous secondary coils, all of which are still contained within the coelom of the umbilical cord. When the embryo reaches 40 mm. in length, the coils rather suddenly return to the abdominal cavity, and the caecum normally is thrown over toward

the right, so that it comes to lie immediately beneath the liver until about the fourth month after birth.⁷ As the elongation continues, the secondary coils of the small intestine become more numerous and the portion of the large intestine which projected into the umbilical coelom forms a loop extending transversely across the ab-

dominal cavity. At the time of birth, this portion of the large intestine amounts to nearly half the entire length of the colon,⁸ but after the fourth postnatal month, the sigmoid flexure becomes relatively shorter, in relation with the rest of the colon, so that the caecum is pushed downward until it lies in the right iliac fossa.

Case Report:

Mrs. E. W. P., white, aged 59, was first seen October 29, 1939, complaining of abdominal pain in the upper right quadrant. Her physical examination was negative except for tenderness in the right abdomen. Wassermann test—negative; B. M. R.—

+15; Graham Dye Series—deficient function of gallbladder, no calculi present; G. I. Series—negative except for the anomaly of a left-sided colon.

The diagnosis of left-sided colon aided in this case in ruling out the possibility of chronic appendicitis; the pain, therefore, was entirely due to the cholecystitis.

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II.

IDIOPATHIC MULTIPLE PIGMENT SARCOMA (KAPOSI)

DR. MORIZ KAPOSI (1807-1902), who was the son-in-law of Hebra, first described this condition in 1872. He reported 26 cases of idiopathic multiple pigment sarcoma in 1879.¹ These were all in men, beginning on both feet and hands and advancing along the legs and arms until after two or three years they appeared upon the face and trunk. The lesions were round, reddish brown, moderately firm nodules, which later became bluish red from capillary hemorrhages. These were small, separate, irregularly situated nodules, sometimes forming groups and diffuse infiltrations. Some lesions partly disappeared after several months, leaving pigmented areas. After two to five years or more, nodules appeared upon the face and body which were dark bluish red in color, spongy to the touch, and with a tendency to ulcerate.

There was very little glandular enlargement. The general symptoms of fever, diarrhea, and hemoptysis were shortly followed by death. Autopsy showed similar nodules throughout the internal organs.

Microscopically, these were round celled sarcomata with capillary hemorrhages causing the bluish black pigmentation of the original bluish red nodules. There is some difference of opinion in the literature as to the etiological agent. Some believe that the cause is an unknown systemic agent attacking the vascular apparatus which causes chronic hyperplastic inflammation and granulomas. The histogenesis is very similar to that of a malignant new growth.² Ewing believes that Kaposi's disease is an infectious granuloma of unknown etiology which may assume neoplastic characteristics.³

The small brownish blue nodule is the earliest form. There is dilation of the blood and lymph vessels with hemorrhagic inflammatory changes. Later there are granulomatous changes with reddish brown or blue nodules consisting of proliferating connective tissue, blood vessels and lymph vessels. The last stage is that of ulcerating tumors which have a tendency to be confluent and are located over the anterior surfaces of the legs and feet. They are reticulo-endothelial tumors and may

either be more connective in type resembling spindle cell sarcomas or more vascular in type and resembling angiomas, endotheliomas or angiosarcomas.

Working on the theory that this disease may be caused by a filtrable virus, several attempts have been made by others to reinoculate Berkefeld filtrates of the tumor suspension. All these have been unsuccessful.⁴ This procedure was, however, attempted in the following case.⁵

Case Report:

J. R. M., white, male, aged 74 years, retired railroad employee, was first seen January 2, 1939. His father died at the age of 82 with cardiac disease, and his mother at the age of 86 of unknown cause. The first lesion appeared 5 years previous on his right knee. A second appeared four months later on his left knee, while the third appeared just above the left heel. All three were surgically removed but no pathological examination was made. A total of 22 similar lesions appeared at intervals

on the outside of the left leg. They were all elevated, discrete and bluish black in color. Three of these lesions had ulcerated through the surface.

Pathological examination by Dr. Choisser of George Washington University and Dr. DeCoursey of the Army Medical Museum confirmed the diagnosis of Kaposi Sarcoma. X-ray treatment from June 19, 1939, to September 1, 1939, caused complete disappearance of the lesions. A new group of twelve nodules in a serpiginous arrangement have appeared on the outer surface of the same knee just above the area treated by x-ray.

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Annual Meeting of the Associated Physicians of Long Island

THE 42nd annual meeting will be held in Brooklyn on Saturday, January 25th, 1941. The clinical and scientific program will be at the St. Catherine's Hospital, 133 Bushwick Avenue. The clinical session, beginning at 10:00 A. M., will offer the following: Cubicle System in Pediatric Ward—Demonstration—Dry Clinic, Dr. Regan & Staff; X-Ray Exhibits, Dr. Taormina & Staff; Bronchiectasis—X-Ray—Demonstrations, Dr. DeCoste & Staff; Ward Rounds; Round Table Discussion—Local Anesthesia in Obstetrics; Operations; Dry Clinic—Urology; Dry Clinics—Surgical Staff; Case Reports with Exhibit of Specimens, Department of Pathology. At 1:00 P. M. the members will be the guests of the Hospital at luncheon. At the scientific session, at 2:00 P. M. in the Jennings Hall, the following short papers will

be read: Surgery of the Descending Colon by John M. Scannell; Emergency Treatment of Burns by Daniel A. McAteer; Cardiac Emergencies and their Treatment by Martin A. Murphy; Nose and Throat Complications of Upper Respiratory Infection by Stephen H. DeCoste; Transfusion and Obstetrical Hemorrhage by Charles A. Gordon; Fracture of the Hip by Herbert C. Fett; Serums and Vaccines in Communicable Diseases of Children by Joseph C. Regan. General discussion will follow each paper. The executive session will follow immediately at which election of members and officers for 1941 will take place. The annual dinner will be held at 6:30 P. M. at the Hotel Bossert, 98 Montague Street. The Entertainment Committee is planning to provide an interesting after-dinner speaker. It is hoped there will be a large turnout of both Long Island and Brooklyn members.

APPENDICEAL ABSCESS COMPLICATED WITH MESEN- TERIC THROMBOSIS, FECAL FISTULA, AND *B. COLI* SEPTICEMIA, TREATED WITH SULFAPYRIDINE

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THE recent literature abounds with reports delineating the efficacy of chemotherapeutic measures in combating bacterial infections. It seems justifiable at this time to report a case of appendiceal abscess complicated by extensive thrombosis of the mesentery of the terminal ileum, with *B. coli* bacteriemia and thrombosis of the large pelvic vessels cured by the combined use of supportive and chemotherapeutic agents. Whereas the specific phage therapy was not possible because the strain of the organism was not susceptible to the phage and the use of sulfanilamide and neoprontosil, given both orally and parenterally, failed to clear the blood streams, and since the Na sulfapyridine given intravenously reduced the number of bacteria, the latter drug was used as the agent of choice to combat the septicemia.

This case is of special interest because of the neurological complications and the toxic effects of the sulfapyridine observed during the prolonged and stormy post-

operative convalescence, lasting approximately three months.

In dealing with acute appendicitis

the oft-reiterated surgical concept, "If in doubt, operate," cannot be overemphasized, a surgical dilemma of no infrequent occurrence. By following this policy, observed in a conservative sense, and by this I do not mean indecision, an early surgical intervention, when all the evidence has been correlated, has many a time eliminated, not only complications, but often the loss of life itself. In this enlightened age, when surgery has progressed pari passu with other scientific achievements, the consensus of opinion is that the mortality resulting from acute appendicitis is still very high. Such results are not due to a faulty technique or to a lack of surgical skill, but to a late diagnosis. It is true that patients will not present all the typical cardinal symptoms and that all cases will not have the clear clinical and serological evidences, and yet how often the operation has corroborated the suspicion with the pathological

findings?

The indefinite initial symptomatology of this case led to temporizing for a week before hospitalization took place. The attending physician, in view of the easily palpable mass in the abdomen, the afebrile course, the age of the patient, and because of evidence of secondary anemia, was led to make the presumptive diagnosis of malignancy. During this week's interval of temporizing, considerable damage was done by the invading inflammatory process, apparently begun as a simple retrocecal appendix, so that what might have been a simple appendicitis resulted in a vast pathological involvement. It seems rational to believe that, in the presence of general sclerotic arterial changes, the pathogenesis might have resided in the mesentery of the distal portion of the ileum, beginning as a mesenteric thrombosis with subsequent multiple hemorrhagic infarcts, involving about 10 cm. of the entire width of the mesentery, blocking the circulation of the distal portion of the ileum, and that the appendix and cecum might have become involved by contiguity. Thrombosis and embolism with infarction, though fairly common, are seldom diagnosed in time. They may be the result of endocarditis, arteriosclerosis, or other vascular diseases. Venous thrombosis may result from portal stasis by pressure on the venous trunks caused by a suppurating appendix. It has been observed that vascular occlusion of the mesenteric vessels nearly always causes infarction, and that the extent of tissue involvement depends on the cause and on the duration. In the case in question, the acute paroxysmal abdominal pains, not localizing for several days, relieved by heat, the acute constipation, and the evidence of general arteriosclerosis, were very suggestive of a thrombosis.

Case Report

PATIENT, a 53-year-old white male, was admitted to the 2nd Surgical Division of Morrisania City Hospital, with a history of having been well until one week prior to admission, when he experienced general malaise and headache, followed by epigastric colicky pain radiating

to the right and left upper quadrants of three days duration. Later the pain shifted to the right lower quadrant and persisted there until the time of admission. The pain was pinching in character and was relieved by the application of heat to the area. On the fourth day of illness, the patient took a liberal dose of castor oil which he vomited immediately. Little food had been ingested because of marked anorexia. Patient had been seen by his local physician and was told that he had a tumor in the abdomen and was advised hospitalization, which advice he disregarded. Except for the knowledge of hypertension of two years duration with dyspnea on moderate exertion and orthopnea, his past history was otherwise without note. Had one bowel movement on first day of illness and another when he entered the hospital seven days later.

On admission, examination revealed a pale, rather obese, acutely ill-looking white male of 53, apprehensive, yet in no acute distress. Temperature was 101.2, pulse 116. Heart sounds were distant and of poor quality. There was a soft blowing systolic murmur over the aortic area, not transmitted. Second aortic sound was louder than the corresponding pulmonic sound. Rhythm was regular, blood pressure 180/104. Lungs were clear on percussion and auscultation.

Abdomen: markedly obese, soft throughout, not distended, no rigidity present; in the right lower quadrant there was a large, smooth, globular, ballotable, nontender mass, approximately 12 cm. in diameter. Liver and spleen were not palpable. Rectal examination negative. Physical examination was otherwise essentially negative. Urine showed 3 plus acetone, but was otherwise negative. W.B.C. 9000 with 63 polymorphonuclear leukocytes and 37 lymphocytes. R.B.C. 4 million with 70 per cent hemoglobin.

The diagnosis entertained at this time was appendiceal abscess walled off with omentum. Patient was given 1000 cc. of 5 per cent glucose in saline to combat the acetoneuria, and expectant therapy was instituted. However, on the day following admission patient had a chill with rise of

temperature to 103.8, so that, with the possibility of an early pylephlebitis, it was decided to drain the abscess.

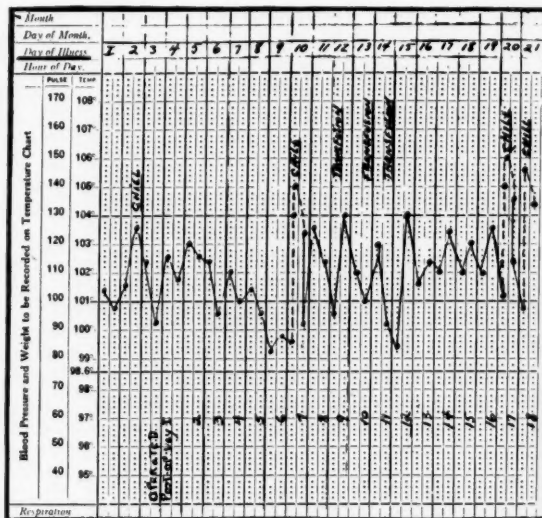
Procedure:

RIGHT rectus incision with muscle retracted medially. Peritoneum opened. The terminal end of the ileum was deeply cyanotic, folded side by side with the corresponding mesentery and both held firmly together by adhesions. The mesentery, about 10 cm., was necrotic and by analogy it looked like red hepatization. The palpable mass was made up of the distal portion of the ileum, the mesentery, and the cecum matted together. By gentle blunt dissection some adhesions were broken, and peristalsis was observed in the cyanotic portion of the ileum. The cyanosis, though diminished in intensity, persisted throughout the operation. In removing adhesions from the cecum, from underneath it about 30 cc. of green foul pus oozed out, apparently from the retrocecal abscess. One of the appendices epiploicae, about the size of the thumb, was removed; also a specimen from the thrombotic mesentery, for microscopic examination, was taken. No other surgical step was deemed wise. Two Penrose drains were placed at the root of the necrotic mass, and the abdomen was closed in layers about the drains.

Postoperative

PATIENT'S illness ran a prolonged course. Following the operation, neoprontosil, both orally and parenterally, was given with no effect on the temperature. Vomiting and gastric distress set in and the neoprontosil was discontinued. On the 7th day, patient had a chill, and the temperature rose to 105.6. Blood culture after 48 hrs. showed 8 colonies of *B. coli* on blood agar plates. Blood count 14,000, 98 per cent polys, and 2 per cent lymphocytes. Examination of the incision showed

no evidence of any inflammatory process. The gastric distress had abated and sulfanilamide, 90 grains daily, was given for two days, followed by 30 grains daily. Jaundice of the sclerae and the skin supervened, either due to the toxemia or to the sulfanilamide, or to both. The icteric index was 35, urine negative for bile, and



positive in dilution of 1:20 on two occasions for urobilinogen. The liver was not enlarged and there was no tenderness present over the liver area. At this juncture, it was deemed advisable to stop the sulfanilamide and spare the liver from any further damage. A course of phage therapy was given and, having obtained no reaction, it was discontinued. No specific phage could be made from the organism isolated in the culture. It was found that this organism was not susceptible to phage. This factor probably explains the failure of the patient to react to therapeutic measures. During this period, the patient received continuous supportive therapy, consisting of frequent transfusions of 250 cc. of preserved blood, and continuous infusions of 5 per cent glucose in saline. Patient at this time appeared to be very toxic.

Was stuporous with the temperature ranging from 101 to 104. On the 12th postoperative day, 4 plus pitting edema of the legs was noticed. This distressing symptom persisted throughout the patient's entire stay in the hospital. The general impression at this time was that the patient was suffering from a pelvic thrombo-

collection of pus on the right side forcing the diaphragm upward, or an early lobar pneumonia. Radiographic examination of the chest with portable apparatus was negative. The chest signs gradually disappeared within the next 3 days. The blood culture taken at the time of the chill was reported 12 hrs. later as showing approxi-

mately 86 colonies of *B. coli* on blood agar plates. Following this chill, patient had repeated shaking chills lasting for 2 hrs., temperature reaching as high as 105 and 106. Blood culture during this period revealed innumerable colonies of *B. coli* organisms. Despite the jaundice which was still persistent, and notwithstanding the grave and toxic condition of the patient on the 19th postoperative day, he received 75 grains (5 Gm.) of Na sulfapyridine intravenously as a 5 per cent solution in triple distilled water. This dose

was repeated eight hours later. The following morning, nine hours after the last administration of sulfapyridine via vein, the temperature dropped precipitously to 98. Jaundice and edema of the extremities remained in statu quo. That day sulfapyridine was given orally in doses of 15 grains every 4 hours. The blood sulfapyridine level at this time was 11.5 mg. per cent of the free drug. Because of marked vomiting, it was found necessary to administer sulfapyridine rectally as a retention enema containing 25 grains of sulfapyridine and 10 grains of sodium bicarbonate in 90 cc. of warm saline. During the following 4 days, patient received a total of 200 grains of sulfapyridine. A blood culture taken at this time was reported negative after 48

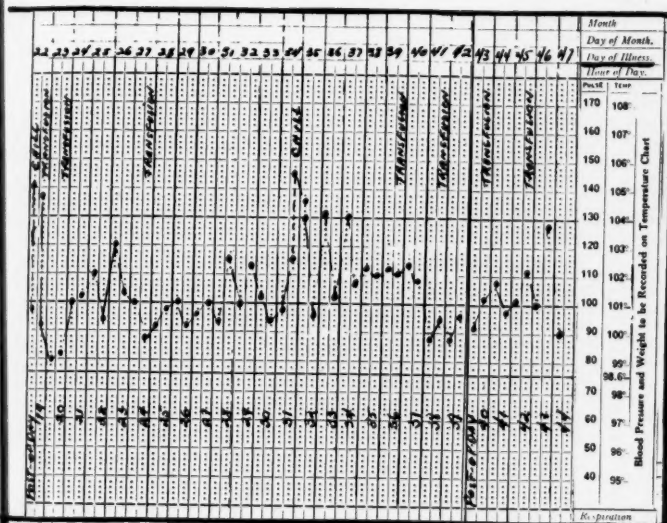


Fig. 1

phlebitis. Rectal examination was, however, negative. A fecal fistula first made its appearance at the site of the incision, and all fecal material passed through this fistula, patient having no spontaneous bowel movements.

On the 17th postoperative day, patient had a shaking chill lasting 15 minutes, during which he complained of wheezing respiration. Examination of the chest revealed diminution of the breath sounds at the right base with a few fine and medium moist râles over this area. It was thought to be either a septic embolus from the pelvic thrombophlebitis, or a subphrenic

hours. Throughout this period, small blood transfusions and intravenous fluids were given so that since admission patient had received 1500 cc. of whole blood. Jaundice had diminished and edema of the extremities, though still present, had considerably retrogressed.

On the 31st postoperative day, patient had another chill with the temperature rising to 105. The blood culture taken at this time revealed only two colonies of *B. coli* on blood agar plates. Sulfapyridine was given intravenously in a 5 per cent solution in distilled water, using only 45 grains. Patient became very agitated in the course of the venous injection and it was decided to continue the medication via rectum as before. Subsequent cultures of blood following the administration of sulfapyridine were negative with gradual defervescence of the temperature. During this last phase of the disease, patient had developed some neurological signs worthy of note. He had ptosis of the right lid and weakness of the facial muscles with right tongue deviation and marked squint of the right eye. Both fundi showed multiple areas of hemorrhage with exudates. He also had coarse tremor of the right hand. Were these the results of the general septic process, or a septic embolus, or the toxic effect of the sulfapyridine? Certainly there was insufficient evidence of a large brain stem lesion.

On the 43rd postoperative day, the temperature rose to 104. Again sulfapyridine was administered with the initial dose of 40 grains daily, and 20 grains thereafter. The temperature began to drop, remaining at 100 level.

On the 65th postoperative day, all the neurological symptoms had disappeared and the edema of the extremities showed traces only at the ankles. Serum protein on 17th P. O. day was 4.99, albumin 2.47, globulin 2.52. Total protein at the time of discharge was 6.2. The P.S.P. excretion test on the 72nd day (postoperative) revealed 40 per cent dye recovered in the first hour and 65 per cent in two hours. Casual urine specimens throughout the early phase of the disease ranged from 1015 to 1032 S.G., with white blood cells

ranging from 5 to 15, occasional red blood cells, and a few hyaline or finely granular casts with faint traces of albumin. Urine concentration tests showed ability to concentrate in small range, 1010 to 1016. Blood pressure was 160/104. E.K.G.'s on two occasions revealed deviations of electrical axis to the left with slurring of Q.R.S. complexes in all four leads. N.P.N. throughout his illness was within normal limits.

On the 82nd postoperative day, patient was discharged. Wound had healed and the only complaint was the edema in both ankles.

Discussion

THE treatment of thrombosis of the mesentery is surgical, and attempting a resection under such unfavorable conditions, in the presence of pus, would have been fatal to the patient. At best, if the surgical intervention is early enough, within a few hours after the diagnosis is made, a small percentage of the patients recover. The thrombosis, in our case, must have been in the venous stem of the mesenteric arch, involving several loops of the ileum. That would account for the necrosis and marked edema of the mesentery. The arterial circulation, though apparently absent, must have been active, and, as soon as the pressure was removed, it proceeded to improve, or, if it was blocked, a collateral circulation must have taken place. Complete circulatory failure, assuming that the mesentery was gangrenous, would have caused necrosis of the ileum with sloughing and subsequent death of the patient. On the other hand, if the entire pathology was caused by a suppurative appendix, as soon as the adhesions were broken, the abscess drained, and the pressure removed, with a re-established circulation, the edema of the tissues disappeared and the entire pathological picture took a brighter aspect.

The neurological symptoms were probably caused by a septic embolus, which resolved itself, although, in the presence of arterial sclerotic changes, it might have been brought on by the toxicity of the sulfapyridine. It is maintained that sulfa-

pyridine causes a cellular anemia, which, in the absence of any other cause, explains the persistent edema of the ankles, eight months after the operation.

According to the observations of R. Roche and Prof. Lemierre (*Annales de Méd.* 44:271-292, 1938), the colon bacillus can invade the blood stream and grow there only in debilitated states. They call the colon bacillus "le microbe de sortie," which leaves its normal habitat in the intestines and enters the blood stream only when the general resistance is lowered.

This manifestation is true, although the original strain of bacterium causing the primary infection may be one other than *B. coli*. Bacteriologists frequently report

the finding of bacteria in the blood immediately after death.

According to the above observations of Roche and Lemierre, who have reported a series of cases, the *Bacillus coli* enters the blood stream in debilitated conditions. In order to increase the resistance and thereby remove the locus minoris resistentiae in the intestinal wall, the treatment should be directed along those lines which have a tendency to increase the resistance of the patient. It is my opinion, which finds support also in the observations of other men, that repeated blood transfusions aided by supportive treatment will carry the patient through the storm and eventually combat the septicemia.

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EDITORIALS

—Concluded from page 2

rationalization, which preserves their self respect.

MEDICAL TIMES, JANUARY, 1941

The prognosis, after all, is good. There is hope. This social disease is not surely incurable. Appeasement will yet give way to intervention. Our sociological Chamberlains will be replaced by Churchills.

CANCER

CANCER OF THE GALLBLADDER

RECENTLY one of us operated upon a case of carcinoma of the gallbladder (Park Avenue Hospital, No. 41,942). The patient was a woman, aged 71 years, who had a cholecystotomy for gallstones in 1914. She was well until 1928 when an x-ray study of her gallbladder was done. In 1939 there was a slight discharge from the scar of the operation done twenty-five years before. However, after a number of months of intermittent attacks of pain and discharge, this healed and remained healed. At this admission (1940) she complained of pain in the gallbladder region, and an exploratory celiotomy was thought to be advisable. On opening the abdomen it was thought wise to do a cholecystectomy because we were able to palpate stones within the gallbladder and because we found a thickening of the gallbladder wall in certain areas which we thought might be carcinomatous. On the pathologic request, too, we asked for special examination of these suspicious areas. There was no involvement of the

liver, but there were areas in the vicinity of the common duct which at first gave the impression of calculi; but which were found to be indurated tissue adjoining the duct. The pathological diagnosis was carcinoma of the gallbladder, chronic and acute cholecystitis.

At the time of operation we were of the opinion that primary cancer of the gall-

bladder was fairly common. On reviewing the published papers, we discovered that it is a rather rare lesion. Probably our opinion was formed from the fact that in Vital Statistics records, cancers of the liver and the bile passages are included under a single title. This fact has also been pointed out by Lam (8). The totals for this group are fairly high,

higher, for instance, than cancer of the rectum and anus. These totals are also found to be noticeably higher than cancer of the prostate, and decidedly higher than the entire group of cancer of the lip, tongue, mouth, and jaw.

*Department Edited by
John M. Swan, M.D.
(Pennsylvania) F.A.C.P.*

**EXECUTIVE SECRETARY
NEW YORK STATE COMMITTEE
OF THE AMERICAN
SOCIETY FOR THE CONTROL
OF CANCER.**

Assistant Editors

*Charles William Hennington, B.S.
(Rochester), M.D. (Hopkins),
F.A.C.S., and Robert Lee Brown,
A.B. (Michigan), M.D. (Harvard).*

DURING the eight years in which this Department has been conducted, we have accumulated abstracts of sixty-four articles on cancer of the liver and the bile passages. One of these, by Seide and Geller (12), discusses the connection between cholelithiasis and cancer of the gall bladder. In a study of thirty-five cases of cancer of the gallbladder, seventeen also presented stones (48.5 per cent). These authors support the Aschoff-Bacmeister view that the cancer is primary and the stones secondary. They also refer to autopsy statistics which seem to show that gallstones may be present as often as ten per cent, yet cancer of the gallbladder itself is very rare. They refer to Koehe who says that but 1.0 per cent of cases of cholelithiasis leads to cancer in the gallbladder.

In a study of thirty-four cases of carcinoma Lam (8) found stones in twenty of the gallbladders "which were opened" (86.95 per cent). If, however, the percentage of the cases in which gallstones were found is based on the total thirty-four, it becomes 58.8. He says: "It would seem reasonable to conclude that at least 4.0 to 5.0 per cent of women of the cancer age who have stones will develop carcinoma of the gallbladder." On the other hand, Wakeley (14) believes that 95.0 per cent of the cases of malignant disease of the gallbladder is produced by calculi. Cancer of the gallbladder is a rare disease but in his opinion it could be made still more infrequent if patients with cholecystitis were more often submitted to operation. Illingworth (7), too, is of the opinion that carcinoma of the gallbladder is a sequel of calculous cholecystitis. "There can be no doubt that there is a definite relationship between gallstones and carcinoma." "An even more important predisposing factor is the presence of cholecystitis." He is convinced that the cancer is due to the chronic irritation produced by the presence of the calculi.

FROM the point of view of numbers the majority of the authors accept the theory that chronic irritation, either from stones or from a low grade infection,

causes cancer. Bailey (1) looks upon an infected gallbladder as a progressive pathological condition. In the twenty-eight cases of cholelithiasis which he reports in detail, two had cancer involving the cystic duct (7.14 per cent). Mårtensson (10) says cancer of the gallbladder was associated with gallstones in twenty-three out of 1,288 cases of gallstones (1.78 per cent). In addition there were nine cases of cancer of the bile ducts.

Cooper (3) reports forty-eight cases of carcinoma of gallbladder observed in the New York Hospital from 1915 to 1935, and attributes them to irritation of the gallbladder by stones and infection.

In 8,534 autopsies at the Cook County Hospital (Chicago) between January 1, 1929, and July 1, 1936, Ragins (11) found thirty-one primary malignant tumors of the gallbladder (0.36 per cent), twenty-eight carcinomata, one melanoblastoma, and two sarcomata. Gallstones were present in both the cases of sarcoma.

But opposed to this majority view is an interesting article by Warren and Balch (15) who studied the records of the Massachusetts General Hospital (1898 to 1939) and found eighty-four cases of cancer of the gallbladder. They believe the frequency of the association of gallstones and cancer probably lies somewhere between 1.0 and 2.5 per cent. They are, therefore, of the opinion that gallstones rarely lead to cancer. Although they do cholecystectomies as a rule, it is not from the fear of subsequent development of cancer, but because of the danger of other complications now fully recognized by surgeons everywhere. Their view is sustained by an important paper by John F. Erdmann (5) who, about five years ago, reported 522 cholecystectomies in which he found only six cases of cancer (1.14 per cent). Five of these were carcinoma and one sarcoma. Crump (4) in 1,000 routine necropsies found carcinoma of the biliary tract in only twenty-six cases (2.6 per cent). Burrows (2) also questioned the clinical belief that gallstones cause cancer of the gallbladder. He attempted to prove his view by inserting gallstones into the gallbladders of forty-seven guinea

pigs! Apparently this minority view is based on the belief that chronic cholecystitis and cholelithiasis ought to lead to cancer more often than in 1.0 or 2.0 per cent of the cases to establish the connection with irritation as an etiological factor causing cancer.

IT is obvious that at present we do not possess sufficient data to reach a decision as to which of these two groups of authors may be correct. And so, we must content ourselves with an inconclusive answer.

The clinical picture of primary carcinoma of the gallbladder is the same as that of many cases of inflammatory biliary disease and of cancer of the organs in anatomical relation to the gallbladder. Pain in the upper abdominal quadrant is the most frequent symptom. Jaundice, abdominal distress, nausea, belching, tumor, anorexia, constipation, indigestion and pain in the back are other symptoms. Tenderness in the right upper quadrant, palpable tumor, palpable liver edge, are the usual objective findings. In fourteen of Lam's thirty-four cases (41.17 per cent) there was no tenderness. Lam (8) suggests the following points which would favor a diagnosis of cancer: Advanced age of the patient, tumor (particularly if it is not tender), loss of weight, absence of leukocytosis and progressive increase in the symptoms.

Lam points out that in his thirty-four cases the preoperative diagnosis was cholecystitis in twelve, carcinoma of the pancreas or of the duct in nine, carcinoma of the gallbladder in four, carcinoma of the liver, stone in the common bile duct, cirrhosis of the liver and intestinal obstruction in two each and carcinoma of the stomach in one. See also Flood, Seegal, Spock and Loeb (6) who discuss the significance of nonhemolytic jaundice.

SPITZENBERGER (13) asserts that he can diagnose ulcerative carcinoma of the gallbladder by means of the röntgen ray! He reports two cases in considerable detail, accompanied by three illustrations of his x-ray studies.

Lephene (9) points out the necessity of an exploratory celiotomy before a positive diagnosis can be made.

It appears that there is every reason to undertake cholecystectomy for the relief of gallbladder disease. It is only rarely not feasible. It is the operation of choice in nearly all clinics quite aside from the relatively infrequent occurrence of cancer. Lam (8) says: "Even if the danger of loss of life from carcinoma of the gallbladder were the same or less than the danger from the operative procedure (1.0 to 3.0 per cent) cholecystectomy is indicated in the absence of symptoms because of the danger of complications other than malignancy."

We agree with the opinion of the majority, that prolonged inflammation, with or without stones, is a factor favoring the appearance of cancer. It is surprising that it does not do so more frequently. However, cancer in the duodenum is rare also. Possibly there is an analogy in the alkaline nature of the bile and the pancreatic juice, or there may be other unrecognized factors present in both instances. Cancer of the pancreas is rare when actual histological proof is demanded. Thus in summarizing we repeat that we continue to favor the view that long-standing irritation in this region is the exciting cause of cancer in patients who are susceptible to the development of cancer. The likelihood of the development of cardiovascular-renal lesions and the mechanical effects of obstruction are other possibilities that warrant cholecystectomy for chronic gallbladder disease.

C. W. H.

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SURVIVALS FOR TEN YEARS OR MORE OF PATIENTS TREATED FOR CANCER IN THE HOSPITALS OF ROCHESTER, N. Y.

AT the 1939 Annual Meeting our Monroe County follow-up system reported a total of ninety-one survivals for ten years or more of patients treated for cancer.

This year seventy-seven of these patients are known to be living:

Year Treated			
1917	Breast	1	
		—	
1923	Rectum	1	1
		—	
1925	Body of Uterus	1	1
	Breast	3	
	Cecum	1	
	Cervical lymphnodes	1	
	Cervix	1	
	Ileum	3	
	Kidney	1	
	Lip	2	
	Ovary	2	
	Stomach	1	
	Testicle	2	
		—	
1926	Breast	3	18
	Cervical lymphnodes	1	
	Cervix	2	
	Sarcoma	1	
	Sigmoid	2	
	Stomach	1	
		—	
1927	Body of Uterus	2	10
	Breast	5	
	Cervix	3	
	Sarcoma	2	
	Sigmoid	1	
		—	
1928	Adrenal	1	13
	Body of Uterus	6	
	Breast	6	
	Cervix	1	
		—	
1929	Body of Uterus	5	14
	Breast	13	
	Cervix	1	
	Vulva	1	
		—	
		20	
		—	
		77	

Eleven have been lost and three have died. One patient treated in 1926 for cancer of the cervix died of cardiovascular-renal disease; one treated in 1927 for cancer of the cervix died of carcinoma of the lung (there are no available details) and one treated in 1928 for cancer of the breast died of mental deterioration, myocarditis and general atherosclerosis. This patient had been treated in the Park Avenue Hospital (No. 17,316). She was admitted to the service of Dr. C. C. Sutter and Dr. George H. Gage did a radical mastectomy (right) on April 18, 1928, employing the Rodman incision. The pathological diagnosis was adenocarcinoma of the right breast. The patient was discharged eighteen days after admission. She was reported a five year survival in 1933 and a ten year survival in 1938.

In 1936 she had a radical mastectomy at the Frederick Ferris Thompson Memorial Hospital, Canandaigua, for carcinoma of the left breast. There were gross metastases in the regional lymphnodes. The histological diagnosis, made at the New York State Institute for the Study of Malignant Disease, was carcinoma of the breast.

In September, 1939, she was admitted to the Strong Memorial Hospital complaining of blindness of three weeks duration, which began suddenly, in the night, accompanied by an acute neurosis. An x-

Reported at the sixteenth Annual Meeting of the New York State Committee of the American Society for the Control of Cancer held in Rochester, December 10, 1940.

ray of the skull showed a large calcified mass, measuring 4.5 cm. in its longer diameter, within the brain above the right mastoid. The sella turcica was enlarged with nearly complete atrophy of the dorsum sellae and the posterior clinoid processes. A diagnosis of slowly growing, calcified tumor of the right temporoparietal region was made. The neurological service was of the opinion that the symptoms were probably due to aneurism of the basilar artery with hemorrhage into the perichiasmal region. The gynecological service discovered a third degree tear through the fourchette with a large urethral caruncle. She was discharged twelve days after admission.

In June, 1940 she was admitted to the Willard State Hospital for "senile psychosis with simple deterioration", where she died on June 21st. There was no autopsy. Clinically, chronic myocarditis and general atherosclerosis were recorded as complicating pathological changes.

At the time of admission to the Park Avenue Hospital the patient was 55 years old. Her expectation of life was 19.6 years. She lived 12 years and 66 days or 62.1 per cent of her life expectancy. The generalized atherosclerosis and myocarditis was undoubtedly a factor in the early death.

In 1935 we reported twenty cases of cancer treated in 1930, the patients known to be living without recurrence in 1935: cancer of the breast, eight; cancer of the cervix, three; cancer of the body of the uterus, five; cancer of the rectum, one; cancer of the cecum, one; sarcoma two. Of these patients eight (40.0 per cent) have been reported living this year (1940) and are now ten year survivals; three of the breast, two of the body of the uterus, the cancer of the rectum and both patients with sarcoma. In the intervening years we have had a report of a case of cancer of the ovary treated in 1930, living and well, and a case of cancer of the breast treated in 1930, living and well in 1940. So that we have to add to previously reported ten year survivals ten new cases. Making 87 ten year survivals in 1940.

Summary

Living in 1939		91
Lost	11	
Dead	3	
		14
Add new cases treated in 1930		10
Ten Year Survivals		87

OF the original twenty cases, four have been lost. One patient with cancer of the breast died of mediastinal cancer during the seventh year, and another who was reported to have had recurrence in the lung during the seventh year died during the ninth year in the Monroe County Hospital. The clinical diagnosis was carcinoma of the right breast with recurrence and extension to the regional lymphnodes and lungs. Autopsy was requested but refused. One patient with cancer of the cervix was killed in an automobile accident during the sixth year, another died of late recurrence in the sixth year. Three of the patients with cancer of the body or the uterus have died; one of recurrence in the eighth year and two during the ninth year.

One of the patients with cancer of the body of the uterus who died in the ninth year was 50 years old in September 1930, when she had a panhysterectomy at Strong Memorial Hospital in the service of Dr. R. N. Ritchie. In the following years she was known to be living and well. In June, 1940 she was readmitted to the Strong Memorial Hospital (medical service) complaining of alternating constipation and diarrhea of six months duration. At the conclusion of the study of the case a diagnosis of carcinoma of the sigmoid with metastases to the liver was made, with secondary anemia, arteriosclerotic and hypertensive heart disease, and diabetes mellitus. No operative procedures were carried out. She died at home October 1, 1940. There was no autopsy. Dr. Ritchie is of the opinion that the carcinoma of the sigmoid was a new cancer and says: "I have no reason to believe that it was metastatic from the uterus at this late date." The patient lived ten years and

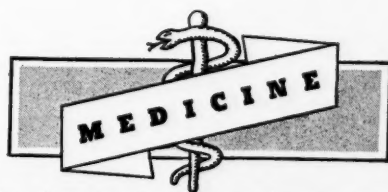
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CONTEMPORARY PROGRESS

Bronchopneumonia of Unusual Character and Undetermined Etiology

YALE KNEELAND, JR. and H.

F. SMETANA (*Bulletin of Johns Hopkins Hospital*, 67: 229, Oct. 1940) report a series of 52 cases of bronchopneumonia of unusual type observed at the Presbyterian Hospital, New York, in 1938 and 1939; 28 of these cases were admitted to the Hospital from August, 1938 through January, 1939; the remaining cases "were fairly evenly distributed throughout the balance of the year." A review of the literature shows that in recent years a number of reports on atypical pulmonary infections of unknown etiology have appeared. Most of these cases at the Presbyterian Hospital occurred in young adults; only 10 of the patients were over forty years of age. In this group of cases, the leukocyte count early in the disease was almost always around 10,000, with a normal or slightly increased polymorphonuclear percentage. The sputum contained "the usual basal flora"; hemolytic streptococci and pneumococci were infrequently found and usually disappeared rapidly. In one group of 29 patients, the symptoms were relatively mild; the onset was characterized by general malaise, fever



and dry cough; the temperature on admission was from 102° to 104° F., with the pulse relatively slow. These patients never ap-

peared very ill, and the most troublesome symptom was the cough. In 17 cases symptoms were much more severe; there was deep cyanosis and marked tachycardia; the pneumonia was usually bilateral and showed a migratory character. Obstructed breathing, asthmatic in character, was a striking symptom in these cases; cyanosis persisted in spite of inhalation of oxygen in high concentration. Some of these patients required frequent inhalations of "adrenalin and epinephrine in the nebulized state." In 6 other cases of the severe type there were complications indicating involvement "of tissues other than the pulmonary." There was only one death in the entire series of 52 cases, although at times some of the patients "seemed moribund." Without the therapeutic measures noted above, they probably would not have recovered. None of the "chemotherapeutic drugs" had any therapeutic effect in these cases. The history of several of the cases indicates that the disease is communicable, also that the same etiological agent is responsible for both the mild and the severe cases. This

etiological agent is not yet determined; it is evidently not any of the microorganisms recoverable from the sputum. The possibility of a filtrable virus has been suggested, but "no proof of this hypothesis is yet at hand."

COMMENT

This type of pneumonia may be due to a virus. During the past few months this reviewer has seen several persons with an infection of the upper respiratory tract with asthmatic symptoms, requiring adrenalin for relief. Cultures from the throat and sputum failed to reveal any definite information. After several weeks some of these persons had bronchopneumonia which was unrelieved by chemotherapy.

M.W.T.

Functional Disturbances of the Gallbladder

H. F. KRAMER (Brooklyn Hospital Journal, 2: 213, Oct. 1940) notes that in recent years there has been a definite tendency away from "indiscriminate surgery" in the treatment of patients with symptoms of gallbladder disease and toward the medical treatment of those cases in which functional derangements rather than pathologic states of the gallbladder are responsible for the symptoms. Improved methods of diagnosis have made this differentiation possible. During the past four years at the Brooklyn Hospital, of 237 gallbladders removed at operation, only 2 showed no definite pathological changes. In the treatment of functional derangements of the gallbladder, distinction is made between the hypotonic gallbladder and the hypertonic gallbladder. In the

dietary and medical treatment of the hypotonic or atonic gallbladder with no obstruction at the sphincter of Oddi, the aim of treatment is to stimulate "the muscular and other functional activities of the gallbladder." A low caloric diet relatively high in cholesterol and fat is indicated; a bland diet with low residue is employed and the fats added "cautiously" in the form of olive oil and butter until the fat tolerance of the individual is determined. Saline waters and bile salts are indicated

in these cases; the bile salts should be used with caution for if there is any obstruction to the flow of bile they may aggravate the symptoms. In the hypertonic type of gallbladder, the bland diet is used with low fat and cholesterol content; sedatives and antispasmodics are indicated. If fats are greatly restricted vitamin A and D concentrates should be added to the diet. The Meltzer-Lyon drainage is of value in most cases; as a rule patients "will not accept" more than a weekly treatment for four weeks; in many

cases, however, they return within six months or a year for another course of treatment, because of the beneficial results obtained.

COMMENT

This is one of the most interesting studies at the present time. Recently I saw some of the work of Carter, Greene and Twiss at the New York Post-Graduate Hospital and it seems to me that this work is revolutionary and will not only bring relief to many persons who have been suffering from functional dis-

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turbances of the gallbladder, but will eliminate "indiscriminate surgery". Those who are interested in this subject should read their book, *Diagnosis and Management of Diseases of the Biliary Tract* (Philadelphia, Lea and Febiger, 1939). Carter and his associates have described the hypotonic and hypertonic gallbladder and have given definite methods for treatment. The method of drainage used in their clinic was based on that of Lyon but many modifications have been made. The Twiss duodenal tube is used and a culture and microscopic examination of the biliary sediment is made. The Lyon, Rehjuss or Levin tubes also may be used. This book gives the various diets used for different types of gallbladder dysfunction and the surgical management of cholelithiasis.

It seems to me that Carter and his associates are practicing preclinical medicine. No doubt the prevention of stasis is one of the best methods of preventing gallstones and the management of the hypotonic and hypertonic types of gallbladder has for its basis the relief of stasis. If these methods are followed carefully there may be fewer failures in gallbladder surgery.

M.W.T.

Vitamins in Peptic Ulcer

H. FIELD, JR., W. D. ROBINSON and D. MELNICK (*Annals of Internal Medicine*, 14: 588, October 1940) note that evidence of vitamin C deficiency is frequent among peptic ulcer patients; such patients are apt to avoid the use of fruits and vegetables voluntarily, and the usual ulcer diet is definitely deficient in this vitamin. On the other hand the characteristic pathology of vitamin C deficiency indicates that this deficiency might have "a deleterious effect" on the healing of peptic ulcer, and might be a definite factor in bleeding. Of 58 patients with peptic ulcer, in whom the plasma ascorbic acid values were determined, 39 showed values below 0.5 mg. per cent ("the beginning scurvy level" of Farmer and Abt). There were 8 patients with values above 0.7 mg. per cent; of these, 2 had been given supplements of synthetic ascorbic acid. Bleeding from the ulcer occurred in 12 of the 58 patients, either at the time of admission or while under treatment at the hospital; in 10 of these 12 cases the ascorbic acid values were below 0.40 mg. per cent; in 2 cases the bleeding occurred after the patients had been in the hospital on an ulcer reg-

imen for eighteen and twenty-six days respectively; the ascorbic acid values in these cases were 0.30 and 0.25 mg. per cent. These findings indicate that in the treatment of peptic ulcer, the vitamin C deficiency should be corrected promptly; this is best done at the beginning of ulcer treatment by the injection of ascorbic acid in moderately large doses, "perhaps 200 mg. four times a day," until the plasma ascorbic acid is 0.9 mg. per cent or higher, or until 2 gm. of ascorbic acid has been given (if plasma values cannot be determined). Thereafter 100 c.c. of orange juice or 50 mg. of ascorbic acid should be given daily by mouth. Other vitamins may also be deficient in the ulcer diet, but the vitamin C deficiency is evidently of the greatest significance.

COMMENT

It is good therapy to examine the blood for the vitamin C level before administering this vitamin. Vitamin C should be adequate in peptic ulcer, especially since the patient is not able to take some of the vegetables and fruits which are necessary in a balanced diet. Vitamin C is useful for healing; during acute infections it should be adequate.

M.W.T.

Cobra Venom in Stenocardia

A. E. PARSONNET and A. BERNSTEIN (*American Journal of Medical Sciences*, 200: 581, Nov. 1940) report the use of cobra venom in 5 cases of stenocardia, in which the pain occurred frequently, at rest as well as on effort; in 2 of these cases there was evidence of coronary disease. Various methods of treatment had been tried without avail except that morphine gave temporary relief from pain. Cobra venom has been found to be effective in the relief of various types of intractable pain, and was therefore used in these cases. The venom was given by intramuscular injection; the initial dose was 5 mouse units; this was repeated daily for two or three days, occasionally for four or five days; in one case this dosage was given twice daily for a considerable period before pain was controlled. After the pain had been relieved the 5 unit dosage

was given for five or six doses, and subsequently the dosage reduced to 5 mouse units once or twice weekly. In all these cases pain was either completely relieved, or only occasional attacks, much less severe, occurred. Cobra venom is not indicated for the relief of pain in acute attacks of coronary thrombosis; it does not give immediate relief, as it does not reach its full effect until a few hours after the injection. Complete relief is not obtained until two or three injections have been given. There were no untoward reactions to the cobra venom injections, and electrocardiographic studies showed no evidence of cardiac damage. While the number of cases treated is small, the results obtained in these patients when all other drugs (except morphine) had failed, indicate that the treatment will be of value in the treatment of other cases of stenocardia with frequent attacks of pain occurring at rest.

COMMENT

Cobra venom does not always relieve intractable pain. Rutherford (New England Journal Med. 221:408, Sept. 1939) found that it gave 100 per cent relief in 7 patients, 75-90 per cent relief in 6 patients, 50 per cent relief in 2 patients. He noted that if no relief was experienced in 7 days that it was not likely to give any benefit. Cobra venom has been used for intractable pain of cancer, tic douloureux and arteriosclerotic gangrene. Injections should be given intramuscularly.

M.W.T.

Pneumococcus Pulmonary Infections and Sulfonamide Therapy

E. JOLTRAIN and LEMPERIÈRE (*Presse médicale*, 48: 763, Sept. 25-28, 1940) report the treatment of bronchopneumonia and typical acute lobar pneumonia with sulfapyridine (the French product Dagénan chiefly). In both types of pneumonia, the temperature dropped rapidly to normal, usually in twenty-four to forty-eight hours in lobar pneumonia, sometimes not till the third day in bronchopneumonia. The general condition of

the patient improved at the same time, but the physical signs of pulmonary involvement persisted for some days. The critical fall in temperature in lobar pneumonia is accompanied by marked polyuria. Sulfapyridine has been given in cases of pneumonia with marked albuminuria, and in 3 cases with more definite signs of acute nephritis, with the result that the albuminuria and other urinary symptoms cleared up promptly. Very few complications were observed in the cases of lobar pneumonia treated with sulfapyridine; signs of a pleural effusion developed in 12 per cent of the cases, but the fluid was found to be sterile, and the predominating cells to be polymorphonuclear leukocytes. There were no cardiac complications, but in most cases small doses of digitalis or injections of camphorated oil had been given from the time of onset of the pneumonia. The sulfapyridine was given in relatively large doses, 6 to 8 tablets the first day, 6 the second day, 4 the next two days, then 3 and 2 tablets. The treatment must be continued, in diminishing doses as indicated, until the physical signs subside, although the fall in temperature occurs promptly. There were signs of intolerance to the drug in only 3 per cent of the cases; this small percentage of undesirable reactions is attributed to the fact that the sulfapyridine was always given with sodium bicarbonate as an alkaliizer. Slight albuminuria developed in a few cases after the administration of sulfapyridine (Dagénan), but it was impossible to determine whether this was due to a toxic or an infectious nephritis.

COMMENT

It is interesting to note that in three patients with acute nephritis, albuminuria and other urinary symptoms cleared under sulfapyridine therapy. Personally, I like sulfathiazol. It is less toxic and the results are very satisfactory. In this article it is noted that the authors used digitalis in most instances. Most observers in this country do not use digitalis except in older persons.

M.W.T.



Perforated Peptic Ulcer; A More Accurate Method of Roentgen Diagnosis

A. J. WILLIAMS and H. V. HARTZELL (*Surgery, Gynecology and Obstetrics*, 71: 606, Nov. 1940) have found the "left lateral decubitus position" superior to the upright position for the diagnosis of perforated peptic ulcer by the demonstration of pneumoperitoneum in the x-ray film. For this procedure the patient lies on the left side; "the x-ray is directed horizontally to the film placed on the opposite side of the patient." This method of examination is much less disturbing to the patient than to raise him to an upright position; it requires less time and is easily carried out at the bedside with a portable x-ray machine; it also has the important advantage of minimizing the danger of the escape of gastric contents into the peritoneal cavity before the operative procedure can be carried out. In a series of 227 cases of proved perforation of peptic ulcer in which the x-ray film was made only in the upright position, pneumoperitoneum was demonstrated in 173 cases, or 76.2 per cent. In a series of 68 cases in which the film was made in the left lateral decubitus position, pneumoperitoneum was demonstrated in 61 cases, or 89.7 per cent. In 63 cases in which films were made in both positions, pneumoperitoneum was demonstrated in 77.7 per cent in the upright position and in 88.9 per cent in the left lateral decubitus position. It was demonstrated in the upright position and not in the left lateral decubitus in only 1.5 per cent, while in 12.7 per cent it was demonstrated only in left lateral decubitus position. This latter position, therefore, gives the higher percentage of positive diagnoses of perforation; if the film is negative in this position, a film may be

made in the upright position, but this will be necessary in only a small percentage of cases according to the authors' experience.

COMMENT

So much depends on the early diagnosis, in cases of perforation of peptic ulcers, that any refinement of technic which promises early recognition of a greater number of cases is well worth careful consideration. The authors have been impressed with the fact that this method of x-ray with the patient in the left lateral decubitus position seems to show pneumoperitoneum in a greater number of cases while at the same time the patient is not put to the added discomfort associated with taking the x-ray in the upright position. Roentgenology by bringing out the presence of pneumoperitoneum is most helpful. Perforation, however, may be present without the corroboration afforded by positive x-ray. The diagnostic aid rendered by x-ray should take its place along with other methods of investigation which rightfully belong to the well planned routine of procedure undertaken in order to arrive at the correct diagnosis.

T.M.B.

The Falling Drop Method for Determining Surgical Prognosis

M. N. FOOTE and G. R. GERST (*American Journal of Surgery*, 50: 316, Nov. 1940) describe the use of the Barbour and Hamilton falling drop method for the determination of the specific gravity of blood and blood plasma in surgical cases. It was found that by daily determinations of the specific gravity of blood and plasma by this method, "pre-clinical edema" can be demonstrated. The plasma protein can be calculated from the plasma specific gravity by the formula of Weech, Reeves and Goetsch; edema will develop if the plasma protein goes below 5.5 gm. per cent; if this occurs, the administration of fluids should be stopped and a small blood transfusion given; in this way the development of edema can be prevented. The specific gravity of both blood and blood plasma is increased in dehydration and shock, but is decreased in hemorrhage and edema. The determination of these values by the falling drop method is thus of value in determining the degree of dehydration as well as of predicting the occurrence of edema. Because

of the fact that the blood and blood plasma specific gravity increases in shock, but decreases if there is hemorrhage, the method has proved of definite value in differentiating between these two conditions, especially in cases where the patient is admitted to the hospital in coma. Seven illustrative cases are reported, showing the various uses of this test.

COMMENT

The postoperative care and management of the dehydrated patient, who is usually anemic, undernourished, with acid-base unbalance and general demoralization, is neither simple nor exactly routine. This is particularly so if the treatment is prolonged and convalescence delayed. The parenteral use of fluids presupposes a judicious selection of the prepared solution and its concentration, the manner and frequency of its administration, and the total amount to be given in 24 hours as compared with the total output for the same period.

Body fluids must be replenished; acid-base unbalance remedied; caloric requirements met. This must be accomplished without further putting of an undue load on the heart and on the kidney. The occurrence of edema must be anticipated. Caution and close clinical observation are demanded. Many laboratory tests are helpful in this complicated picture. The falling drop method for the determination of the specific gravity of blood and blood plasma seems to promise considerable help in making it possible for the surgeon to become aware of edema before the patient becomes waterlogged. It would seem to the reviewer that close clinical observation is very essential. The results of this and other tests must be interpreted in the light of the circumstance surrounding each case. Too great a dependence on any test without clinical correlation may lead the medical attendant far astray.

T.M.B.

Insulin in the Treatment of War Wounds

H. SERELMAN (*Presse médicale*, 48: 782, Oct. 2-5, 1940) first used insulin in the treatment of war wounds in 1937 during the Spanish War. There were many cases in which wounds were infected and healing slow and prolonged in which the insulin treatment resulted in marked and rapid improvement. As the supply of insulin was limited, it was reserved for the treatment of the most severe cases, those with extensive wounds,

with infecting necrosis or fistula formation. Under the insulin treatment, these wounds healed in an average of three weeks, while the less severe wounds required an average of three months to heal without insulin. The general condition of the patients who had been given insulin was also good. In order to determine the tolerance of the patient to insulin the following method was used. The first day 30 gm. of sugar (preferably dextrose) were given in coffee or milk, followed by an intravenous injection of 10 units of insulin. If there were no symptoms such as a feeling of hunger, tachycardia, or profuse sweating, the following day 45 gm. of sugar were given and 15 units of insulin intravenously. If there was still no reaction, the third day 60 gm. of sugar and 20 units of insulin were given. After these injections, the patients showed definite improvement; there was evidence of beginning epithelialization of the wound. Two or three intravenous injections of insulin were given weekly, in the dosage determined by the first series of injections; the dose was not increased above 20 units, however, even if no signs of intolerance had developed. During insulin treatment the diet must be high in carbohydrates; the diet should also be rich in minerals, especially in wounds involving the bones. In wounds involving the bone, the persistence of edema in the surrounding tissues has a favorable effect on bone regeneration. In these cases, therefore, fluids should not be restricted; milk is of value in the diet. In wounds of the soft tissues only, especially those with vascular lesions or circulatory disturbances, the limitation of fluids is indicated and also the restriction of salt in the diet. Insulin acts upon the general metabolism and thus upon the regeneration of the tissues; it can be associated with any form of local treatment indicated. It has been found to be of marked value in the treatment of war wounds, but can also be employed to advantage in civil practice.

COMMENT

War wounds, because of their nature, ex-

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tent and multiplicity, and the circumstances associated with their occurrence, present a constantly recurring challenge to the ability, resourcefulness, initiative and courage of the surgeon. Hemorrhage, shock and infection in turn are met and ably combated. Having saved the patient's life, the next most urgent consideration is to secure rapid healing with as complete restoration of local function and general health as is possible. Among the many established surgical routines insuring such a result, at least one will be found which will satisfy the requirements of the given case. Dietary considerations, supportive measures, heliotherapy, iron, and vitamins all play their part in reconstruction and rehabilitation. Insulin as suggested in this article has proven a worthy adjunct to the other forms of therapy, and indeed it seems to add to the effectiveness of other treatment. The patient receiving a war wound today stands a much greater chance for his life and a much brighter assurance of recovery and rehabilitation. Any and all agencies of healing available should be brought to bear on this problem.

T.M.B.

Hydration of Hyperthyroid Patients

W. BARTLETT, JR. (*Surgery, Gynecology and Obstetrics*, 71:450, Oct. 1940) is of the opinion that "currently accepted figures for desirable fluid intake in surgical patients, especially for those with hyperthyroidism, will be revised downward." In disease conditions, it is not definitely established that the tissues can utilize all the fluid provided, nor do the kidneys, even if functioning normally, necessarily excrete all the water above "the needs of the tissues." The kidneys, the author notes, "are more concerned with the maintenance of serum electrolytes in normal quantities and concentrations" than with "the total body water content". In hyperthyroid patients, especially, there are various factors that tend to favor water retention. In the postoperative crisis in hyperthyroid patients, the author has noted a definite tendency to pulmonary edema and to cerebral symptoms which simulate those of severe cerebral injuries and suggest the presence of cerebral edema. He has found that even in severely thyrotoxic cases, postoperative crises with symptoms of pulmonary and cerebral edema can be avoided

by limitation of fluid intake and the intravenous injection of hypertonic solutions. The total daily fluid intake has been limited to between 2000 and 3000 c.c. in patients with severe hyperthyroidism, especially in the first forty-eight hours after operation; 100 to 500 c.c. of 50 per cent glucose is given intravenously twice daily on the day of operation and once on the first postoperative day. In a few cases 50 per cent sorbitol solution has been given instead of the glucose solution with equally good results, indicating that it is the hypertonicity of the solution and not the glucose molecule that is the important factor. Sufficient glucose must be given by other routes to avoid acidosis.

COMMENT

The amount of fluids necessary to satisfy body tissue wants in the postoperative period in surgical patients depends on many factors which from the nature of changing circumstances are variable. It has been widely accepted that generally speaking a daily intake of 3.6 liters should be sufficient, depending to some extent, of course, on fluid losses, metabolic activity and other considerations. There is no hard and fast rule, no sure routine, nothing to relieve the surgeon of his responsibility of surveying the requirements of each case. The warning contained in the current article by Bartlett, that perhaps the toxic goiter case is being supplied with too great an amount of fluid postoperatively, carries weight, because of his observations in his own practice. I don't believe that this pronouncement will cause other clinicians to decrease the amounts of fluid they are presently giving their patients unless study of the individual case suggests such a curtailment. Your commentator agrees with the suggestion that concentrated and hypertonic solutions will, when indicated, control the effect of pulmonary and cerebral edema and may if used early enough forestall any such complication.

The article is timely and helpful in that it warns against the thoughtless administration of large amounts of fluid, takes into account the ability of the organism to utilize such amounts, and calls attention to the danger of inviting formidable complications such as pulmonary edema and cerebral edema by routinely insisting on administering too much fluid to these patients.

T.M.B.

Surgical Treatment of Carcinoma of the Esophagus

J. H. GARLOCK (*Archives of Surgery*, 41:1184, Nov. 1940) notes that until recent years the diagnosis of cancer of the esophagus was usually made too late for surgical treatment, but in his series of 17 cases, 11, or 64.7 per cent, were found to be operable by radical resection of the tumor. The patient should be prepared for operation by administration of fluids to combat dehydration, the administration of sulfanilamide to decrease the infection of the ulcerated surface of the growth, and also by irrigation of the esophagus. If the tumor is in the upper two thirds of the esophagus, a preliminary gastrostomy should be done, ten to fourteen days before the resection of the esophageal tumor. Successful resections of cancer in the upper third of the esophagus "have been few". For cancer in the middle third of the esophagus, the author employs the Torek operation with some modifications "to simplify the steps and shorten the operation". The author's technique is described in detail. In carcinoma of the lower third of the esophagus, a modification of the Sauerbruch and Fischer technique is used, with "a careful suture anastomosis between the end of the esophagus and the anterior wall of the stomach in two layers and telescoping the esophagus into the stomach," after resection of the tumor. In the author's series of 11 cases of cancer of the esophagus in which radical resection was done, there were 3 post-operative deaths, a mortality of 27.2 per cent. In one case death was due to cerebral hemorrhage, but the condition at the operative site was "satisfactory", the anastomosis intact. The modified Torek operation was done in 7 cases with one death; resection with intrathoracic esophagogastrotomy was done in 4 cases with 2 deaths. Of the 8 patients who survived operation, one died of recurrence in twenty-three months, one of generalized metastases a year after operation, one of coronary disease (in three months). Five are living and well for a period of one month to three and a half years after operation. Resection with esophagogastrotomy was

done in 2 of these cases with survival of seven and eleven months respectively. These results indicate definite progress in the surgical treatment of cancer of the esophagus.

COMMENT

Progress in the management of carcinoma of the esophagus has definitely been made. The author of this paper is reasonably encouraged by the results he has obtained in cancer, particularly in the lower two-thirds of the esophagus. Notable success can be achieved in the surgical attack upon these cases only if the surgeons get them early. The slightest suspicion of such a condition should demand an exhaustive survey. The clinician and the roentgenologist have a very serious responsibility in this respect. Modern surgical advances in technic, preparation, anesthesia and post-operative care can be depended upon in the hands of capable and experienced surgeons. Late diagnosis, high degree of malignancy on the part of the growth, considerable local tension plus metastases, limit if they do not actually contraindicate operative attack.

It would seem reasonable that the roentgenologist, alert and looking for this condition, and the surgeon who has fitted himself for this type of surgery and who is willing and anxious to do it, might make a satisfactory combination. Certainly better statistics will follow such cooperation.

T.M.B.



Relationship of Benign and Malignant Hypernephroid Tumors of Kidney

D. D. KOZOLL and J. D. KIRSHBAUM (*Journal of Urology*, 44:435, Oct. 1940) report that in 12,885 autopsies at the Cook County Hospital, Chicago, Ill. from 1929 to 1939 inclusive, 77 hypernephroid tumors of the kidney were found. Not all of these were of the highly malignant type considered to be characteristic of the renal hypernephroma. In 33 cases the tumor was an "incidental hypernephroid adenoma", which had caused no clinical

symptoms; the patients died from causes not related to the tumor. In 6 other cases, the tumor appeared grossly to be of a benign type, but on histological study was found to show early malignant transformation; these tumors were, therefore, included in the malignant group. The benign tumors varied between 0.5 and 7.5 cm. in diameter, the majority being under 5 cm. The typical histological picture in these tumors was that of a solid alveolus filled with polyhedral cells "rich in lipoid vacuoles"; less frequently this same type of cell was found arranged in cords, or in papillae. Glandular structures were found in 4 of these benign tumors. The 44 malignant hypernephromas or hypernephroid carcinomas were all found at autopsy. The "classical triad" of symptoms attributed to hypernephromas was not present in all cases. Only 6 patients (13 per cent) had hematuria on admission; 19 (45.11 per cent) complained of pain, either abdominal or lumbar; 22 (50 per cent) had a palpable abdominal mass. There was evidence of metastases in 21 patients (47.7 per cent), and 20 (45.4 per cent) showed marked weight loss and cachexia. There were 5 cases in which death was not attributed to the hypernephroma; in 3 of these cases the cause of death was a malignant tumor elsewhere in the body—carcinoma of the esophagus, adenocarcinoma of the colon and adenocarcinoma of the stomach, respectively. In these cases the finding of the hypernephroid carcinoma was "incidental". The histological types in these malignant tumors were more varied than in the benign hypernephroid tumor; the predominant cell was the same polyhedral cell rich in lipoid as was found in the benign tumor; glandular structures occurred more frequently. Spindle-shaped fibroblastic cells and multinucleated giant cells were often found; "multiplicity of histological types" in the tumor or its metastases was frequently noted. In this series, the tumor invaded the renal vein more frequently than the renal pelvis; "this explains the more frequent clinical finding of metastases than of hematuria." From their study of this series of cases, the authors conclude

that pathology of the benign and the malignant hypernephroid tumors indicates that the period of the pathogenic development of the malignant tumor is of longer duration than is indicated by the clinical course. They believe that the benign hypernephroma is "potentially malignant and may be the precursor of the hypernephroid carcinoma." The "early malignant transformation" in 6 tumors that appeared grossly to be benign is further evidence in support of this theory.

COMMENT

One can not mention a neoplasm which does not fulfill a transition from normal to abnormal cells, associated with multiplication. This change may be preclinical until size betrays the growth. If the process stops at this point the neoplasm is benign. If the abnormality extends to cancerous change then the tumor is malignant. This change is certainly preclinical in many cases and marks the time when one would like to recognize the condition and operate. Unfortunately the preclinical era is one of both subjective and objective blissful ignorance. Still more unfortunate is the fact that the clinical era is usually too late. I remember two cases in point. One was a child dead in three or four months after mass and hematuria but no pain had appeared. The other was a man with eighteen months' bleeding, no pain, small mass. Both these cancerous kidneys were a museum of neoplastic breakdown. Some day some one will discover the somehow of diagnosing earlier than at present the changes of the preclinical era.

V.C.P.

Tests for Leakage in the Early Diagnosis of the Ruptured Bladder

H. M. WEYRAUCH, JR. and R. A. PETERFY (*Journal of Urology*, 44:264, Sept. 1940) note that the average mortality following rupture of the bladder is "close to 50 per cent." This mortality is reduced if treatment is instituted within twenty-four hours after injury. Early diagnosis of the condition is, therefore, of great importance and more attention should be given to the bladder in cases of accident. In experiments on dogs, the authors have found that the usual diagnostic test, depending on the amount of fluid recovered after injection into the bladder of a measured amount, is unreliable for the detection of a small rupture, "unless

the bladder is distended to its maximum capacity." This method of testing for recovery of fluid should be supplemented by the cystometrogram to record the intravesical pressure, when injecting fluid into the bladder. When the patient complains of pain, "an abrupt terminal rise" in the intravesical pressure indicates that the capacity of the bladder has been reached. If there is a "terminal plateau" after a normal rise in the cystometrogram, it indicates a small rupture with pain due to extravasation of the fluid that is being injected. If there is a large rupture there is little rise in the intravesical pressure regardless of the amount of fluid injected. If the test for the recovery of fluid and the cystometrogram are in agreement in giving evidence of rupture, "the diagnosis is assured." If, however, the results are not in agreement, or do not indicate leakage, a cystogram, employing sufficient opaque medium to distend the bladder, should be made; an additional film should be made to demonstrate any extravasation of the opaque medium outside the bladder. A smaller amount of opaque medium that has escaped from the bladder is easily seen in the roentgenogram "apart from the clearly demarcated outline of the bladder." If the bladder "goes into a state of spasm" that prevents maximum distention in any of these tests, a small rupture may be overlooked. In cases where marked irritability of the bladder is noted, and the tests are negative, patients should be kept under careful observation until the possibility of rupture can be definitely excluded by the clinical course.

COMMENT

The known tendency, if not the dominant frequency, of ruptures of the bladder to be into the abdominal cavity makes promiscuous and routine distention of it a procedure of danger to the patient. If such a step is taken it should be as part of an x-ray study, with films taken in many directions for the detection of leakage. This precautionary technic will usually locate the site and indicate the size of the tear.

V.C.P.

Prevalence and Importance of Urea-Splitting Bacterial Infections of the Urinary Tract in the Formation of Calculi

R. CHUTE and H. I. SUBY (*Journal of Urology*, 44:590, Nov. 1940) report a study of the formation of urinary tract calculi in 90 cases, in the "stone clinic" of the Massachusetts General Hospital. Of these 90 cases of urinary calculi, 66, or about 75 per cent, showed urinary tract infection. The largest single group of the infected cases (23, or 35 per cent) showed mixed infections, including two or sometimes three of the following organisms: colon bacillus, staphylococcus (usually albus), non-hemolytic streptococcus and bacillus proteus; either the colon bacillus or the staphylococcus was present in every case. All of these mixed infections were found to be "pronounced urea-splitters"; and there was a marked tendency to recurrence of stone, as such recurrence was observed in 17 cases, or 74 per cent, within the period the patient was under observation, which was only two or three years in most cases. In the cases with a single infection, the bacillus coli predominated, occurring in 18 cases, or 27 per cent. In half of these bacillus coli cases the organisms were urea-splitters, and in these 9 cases, there were 6 recurrences of stone; in the 4 cases in which the stones were analyzed, they were of the calcium phosphate type. In the 9 cases of non-urea-splitting bacillus coli infection, there were only 3 cases in which stones recurred, and recurrence was due to a definite metabolic disturbance (such as hyperparathyroidism in one case), not to infection. There were 16 cases of pure staphylococcus, 24 per cent; of these 10 were considered to be urea-splitters and there were 6 recurrences in this group, but none in the 6 cases of infection with non-urea-splitting staphylococci. There were 5 cases of bacillus proteus infection, all urea-splitting organisms, and all showing recurrence of stone; and 2 cases of bacillus influenzae infection, both urea-splitters and both showing "extensive bilateral multiple and recurrent renal calculi." Thus somewhat more than one-half of this group of

cases of urinary calculus (54 per cent) and nearly three quarters (74 per cent) of the infected cases showed infection with urea-splitting bacteria. This group with urea-splitting infection showed 73 per cent recurrences, as compared with 23 per cent in non-urea-splitting infections and 29 per cent in cases with sterile urine. It is evident that "the urea-splitting infections are associated with the most frequent, the most active and the most stubborn stone formation known." Such infections must be eradicated from the urinary tract, "especially after removal of stones, to prevent continued stone formation."

COMMENT

The interesting fact about this study is the proof that the staphylococcus is not the inert organism in pyuria at one time assumed—perhaps twenty-five years ago. Its first appearance in active culture may mark an early period of relatively slight harmfulness. But like all other organisms it is facultative and responds to new environment with a change from moderate to great virulence. No organism shows this facultative change more clearly than the Bacillus coli. Of its eighteen varieties only a few are promptly and actively harmful to the kidneys. In the fight against this organism one may cut off all milk products, on which it thrives, only to find that it continues its activity very well on sugars. This study shows that about 25 per cent of the cases suffered from pure Bacillus coli infection. It is present in very much mixed infection.

One may say safely that calculus formation in any part of the body—kidney or liver—does not occur unless infection is present as an important and potent element.

V.C.P.

Pyuria; Its Significance in Upper Urinary Tract Disease

H. J. LINDNER (*Southern Medical Journal*, 33:1155, November 1940) points out that pus in the urine is one of the most frequent as well as one of the most important findings in disease of the upper urinary tract. It is a manifestation of various conditions which may be at an early stage when pyuria is the only or the chief urinary symptom, but if such conditions are "neglected or disregarded and permitted to progress", they may result in "irreparable renal destruction". This is illustrated by the author's analysis of 123 un-

selected nephrectomies at the Charity Hospital at New Orleans in the last ten years. Ninety-three of the patients in this series were in the third, fourth and fifth decades of life, the largest number (42) in the fourth decade. Symptoms had been present over two years in 37, or 30 per cent, and over one year in 58, or 47 per cent. The most frequent symptom was pyuria, which was noted in 106 cases; lumbar pain, usually dull in character, was present in 92 cases; hematuria had occurred in 22 cases. The "final diagnosis" on the basis of which nephrectomy was done was most frequently renal stone; hydronephrosis, pyonephrosis and ureteral stone were next in frequency. A large percentage of patients in this series were women, most of whom had borne children; the question arises in these cases, whether renal infections associated with previous pregnancies and not adequately treated following delivery may have been responsible for the renal destruction. These cases indicate very closely that persistent pyuria, that does not clear up promptly under treatment with urinary antiseptics, is an indication for a thorough urological study, if serious injury to the kidneys is to be avoided.

COMMENT

Pus or blood in the urine, either alone or in association, demand tracing to their source and cause. The earlier and the more successfully this is done the greater will be the satisfaction of the surgeon and the gratitude of the patient in the final benefit.

V.C.P.



Effect of Varied Banana Intake on Nitrogen and Mineral Balance of Normal Children

H. A. HUNSCHER, F. C. HUMMEL and I. G. MACY (*American Journal of Diseases of Children*, 60:509, Sept. 1940)

report a study of the effect of varying the amount of banana intake in 8 normal children five to eight years of age. In the pre-experimental period (two hundred and seventy-five days), the daily diet of 6 of the children included 100 gm. each of apple and banana; the daily diet of 2 of the children included 200 gm. of apple and no banana. In the experimental period of two hundred and eighty-five days an additional 100 gm. of banana per day was added to a general mixed diet. During the pre-experimental and experimental periods, the intake, excretion and apparent retention of nitrogen, the seven acid-base mineral elements, mineral cations and anions per kilogram of body weight were determined. The ingestion of the additional 100 gm. of banana daily was accompanied in each child by an increased retention "or an increased percentage of intake retained" of nitrogen, calcium, magnesium, sodium, potassium, phosphorus, chlorine and sulfur. While the retention of both mineral cations and ions increased during the period of increased banana intake, "indicating a speeded rate of synthesis of both hard and soft tissue," the storage of excess base per kilogram per day showed a slight reduction, "implying a greater stimulus to the construction of soft tissue." This was also indicated by the fact that a decreased excess of anions was demonstrated in the urine, and also by the ratio of calcium:phosphorus retention, which was found to be less than 1 throughout the experimental period. The additional banana in the diet was not found to affect the fecal fat excretion. These studies indicate that banana has a "definite nutritive value" in the diet, but "its modus operandi is still vague." Its value may be due in part to the special physiologic value of its polysaccharides, to its vitamin content or to its alkalizing effect.

Relation of Vitamin D Intake to the Age of the Infant at the Time of Eruption of the First Deciduous Incisor

T. D. SPEIDEL and G. STEARNS (*Journal of Pediatrics*, 17:506, Oct. 1940) report a study of 51 infants in the Chil-

dren's Hospital of the State University of Iowa who remained in the Hospital until after the first tooth erupted. They were all given carefully controlled adequate diets which differed only in the amount of vitamin D added. In 22 infants given vitamin D in amounts of 300 to 400 units daily, an amount which has been found to promote "optimum linear growth" in infancy, the earliest mean age of the eruption of the first deciduous lower central incisor was 24.68 weeks. In 17 infants with a low vitamin D intake—from 135 to 270 units daily, the eruption of the first tooth was definitely delayed, occurring at a mean age of 28.29 weeks. In 6 infants given a high vitamin D intake, over 1800 units daily, the eruption of the first incisor appeared delayed, occurring at a mean age of 27.16 weeks. However, this finding is regarded as "less conclusive because of the small number of infants in this group." All these infants were in good health throughout their stay in the Hospital. In 6 infants who developed some type of illness, but who had received the "optimum" amount of vitamin D—300 to 400 units daily, the eruption of the first incisor showed a definite delay, occurring at a mean age of 29.0 weeks. While this group is also small, it seems to indicate that "illness delays tooth eruption and that the earlier eruption age is the more nearly normal." The authors find that "the response of dental eruption to variation in vitamin D intake tends to parallel the responses of linear growth and mineral retention to the same influence during infancy."

Rheumatic Infection in Children In the Deep South

J. E. BAILEY (*New Orleans Medical and Surgical Journal*, 90: 240, Nov. 1940) notes that rheumatic infection in children is not as prevalent in the "deep South" as in the northern states of the United States; and when it does occur its course and termination are different, and "the end results much less disastrous." The author's observations lead him to conclude that the incidence of rheumatic infection may be increasing in the South, but it still is of a

milder type than in the North. He distinguishes subacute and acute types observed in recent years. In 42 cases of the subacute type, the characteristic symptoms were: Pain in the upper and lower extremities, varying in intensity and more or less transitory, increasing in "periods of prolonged rain and temperature below the average"; and intermittent, low grade temperatures, with periods of complete remission, with negative tests for tuberculosis, malaria and brucellosis. Poor appetite and failure to gain, and nervousness and fatigue were also characteristic. A systolic murmur was heard over the apex in 45 per cent of the group; the apex beat was exaggerated and the pulse rate slightly increased. Three patients showed "mild choreic manifestations," and one patient definite chorea. Hypertrophied and infected tonsils were found in 75 per cent. There were 20 cases of acute rheumatic infection, 75 per cent. of which were seen during the winter and spring months. These cases were characterized by pains in the joints; the pains were migratory and varied in severity; the joints were painful on touch or motion, but showed neither redness nor swelling. In each case fever "ushered in" the acute attack; the temperature reached 102° to 103° F., but subsequently dropped and fluctuated usually between normal and 100.5° F. Six patients, or 30 per cent of this group, showed a definite mitral systolic murmur that did not improve; this was marked in 2 cases; none showed electrocardiographic evidence of cardiac disease. The pulse rate was increased in all of this group, and the rate remained "well over 100," often for months. Brucellosis was excluded in all cases by laboratory tests. "The classical signs and symptoms" of rheumatic infection and severe cardiac involvement, the author notes, are usually lacking in the South, yet the syndromes described "must be regarded as indicative of the rheumatic state until definite proof is found to the contrary."

Peptic Ulcer in Children

W. F. BURDICK (*Journal of Pediatrics*,

17: 654, Nov. 1940) notes that the symptoms of peptic ulcer in children are not typical as they are in adults, and the correct diagnosis can be made only if the physician "is closely on his guard." The characteristic pain of peptic ulcer occurring with relation to food is not found in children until they approach adolescence; nor is there definite localization of epigastric tenderness. Diagnosis must be based on the clinical history and on the roentgenological examination. It is difficult to show the typical defects of peptic ulcer in children with roentgenograms unless numerous serial plates are made; they are best demonstrated by the fluoroscope "supported by x-ray film." In 21,231 admissions to the Children's Hospital, Washington, D. C., from 1932 to 1939 inclusive, there were 8 cases of peptic ulcer, 6 of which were duodenal and 2 gastric. In all except 3 cases there was definite fluoroscopic and x-ray evidence of the nature of the lesion; in 2 cases diagnosis was made only at autopsy, and one was diagnosed clinically. The author adds reports of 2 cases seen in private practice, making a total of 10 cases. In only one of these cases—the case diagnosed clinically as duodenal ulcer—was the typical hunger pain present; this patient was a girl thirteen years of age, at which age the pain of peptic ulcer is more apt to show the adult characteristics; she also had occasional tarry stools and vomited "coffee-ground material" while under observation at the hospital. In the other cases, the most frequent complaints were anorexia, retarded growth, vague abdominal distress, and constipation; occasional tarry stools had been noted in some instances. In one of the fatal cases the child was admitted with pneumonia, but death was due to massive hemorrhage in an old gastric ulcer; at autopsy the stomach contained about 500 cc. of clotted blood and the whole gastrointestinal tract was filled with "reddish black tarry fluid." The other fatal case occurred in an infant three weeks old and represented a peptic ulcer of the newborn due to congenital incomplete obstruction at the duodenojejunal junction. The author advocates "a freer use of the x-ray" in children showing

vague abdominal distress, anorexia and retardation of growth without apparent cause. In this way the diagnosis of peptic ulcer may be made before any "alarming symptom," such as hemorrhage or perforation, occurs. The cases reported in which the diagnosis was established in this way responded well to a modified Sippy diet, sometimes combined with antacids and in one case with belladonna at the beginning of treatment.

Erythroblastic Anemia of the Newborn

B. SHAPIRO and M. BEVILACQUA (*Archives of Pediatrics*, 57: 659, Oct. 1940) state that in the last three years, they have seen "many cases" of blood dyscrasias in the newborn; of these 7 cases were diagnosed as erythroblastic anemia. Erythroblastic anemia of the newborn is characterized by a moderate or severe degree of anemia that as a rule is macrocytic and hyperchromic in type; nucleated red cells of the normoblastic type are present, usually in large numbers; erythroblasts and megaloblasts are occasionally found; there is marked poikilocytosis and anisocytosis. Clinically there may or may

not be jaundice at the onset; in cases with jaundice, this usually appears within the first few hours of life; the anemia is severe, the percentage of nucleated red cells high; this type is rapidly fatal unless promptly treated by transfusion. In the cases without jaundice, the anemia most often develops after the first week of life, and is less severe, with a smaller percentage of normoblasts. In 2 of the cases reported, the infants were brothers; in the first-born the anemia was of the milder type, in the second child of the severe type with jaundice. In 6 of the 7 cases reported, recovery was rapid after two or three transfusions; the amount of blood given was calculated on the basis of 10 cc. per pound of body weight. In the one fatal case, the condition was too far advanced when the child was first seen. These 7 cases were all seen within two years and the surviving children have been kept under observation; only one shows residual symptoms suggesting "basilar nuclear involvement of the brain." Another had convulsions when six months of age, but has developed normally since ten with no residual symptoms.



Psychiatrists Organize for Public Education Work

ORGANIZATION of twelve regional districts, each headed by a nationally known psychiatrist to cooperate with the press and otherwise to foster the dissemination of sound psychiatric information to the public, was recently announced by Dr. C. Charles Burlingame, Chairman of the Committee on Public Education of the American Psychiatric Association.

Regional chairmen are as follows:

Dr. Franklin G. Ebaugh, Denver, Colorado

Dr. Ralph C. Hamill, Chicago, Illinois

Dr. Titus H. Harris, Galveston, Texas

Dr. Richard H. Hutchings, Utica, New York

Dr. George S. Johnson, San Francisco, California

Dr. William C. Menninger, Topeka, Kansas

Dr. Merrill Moore, Boston, Massachusetts

Dr. Arthur P. Noyes, Norristown, Pennsylvania

Dr. Winfred Overholser, Washington, D. C.

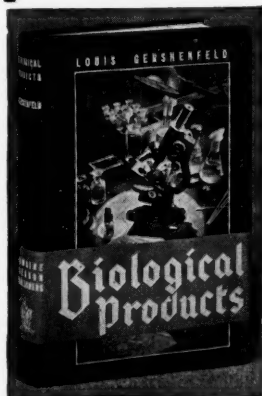
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For proper exposition of the clinical anatomy of the hand and forearm, numerous dissections were made from various points of view in order to depict the features of the greatest significance in surgical treatment. Selected dissections are here portrayed as plates which represent the ultimate selection in four years of special study. Roentgenograms of hands, in which special radio-opaque materials have been injected to delimit tissue spaces and determine their relationships are included.

The scope of the book automatically excludes fractures, dislocations, congenital deformities, plastic operations and non-surgical infections. Lesions not primarily surgical are included for the bearing they may have on surgical infections, e.g., lues, tularemia, diabetes, gangrene, and tuberculosis.

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Real Facts on Vitamins and Deficiencies

Eddy and Dalldorf

THE AVITAMINOSES

By WALTER H. EDDY, Ph.D., Professor of Physiological Chemistry, Teachers College, Columbia University; Director, Bureau of Foods and Sanitation, Good Housekeeping Magazine, and GILBERT DALLDORF, M.D., Pathologist to the Grasslands and North Westchester Hospitals, Westchester County, N. Y. Second edition (1941) enlarged to over 500 pages with 41 plates and 43 tables, still only \$4.50.

Although the first edition is only three years old it has become recognized as a standard work of reliability and authority in the very important field of vitamin deficiencies. Because of so many advances in our knowledge of the vitamins it has been necessary to entirely rewrite the book using over 150 more pages, and many chapters have new titles. It is again a most practical manual providing an up-to-date review of the field from the clinical, chemical, and pathological aspects. Obviously a necessity for experts it is almost equally necessary for general practitioners whose patients have been made vitamin conscious and naturally expect their family physician to be fully informed.

Physicians themselves are bombarded with advertising literature of various products proclaimed as necessities for overcoming vitamin deficiencies so that it is difficult to distinguish the facts and apply sound judgment to individual patients without the well-balanced scientific guidance which this book provides. It is well and clearly written and the reader does not need to be an expert in biochemistry to understand it. The chapter on cellular oxidation has been written especially for those readers whose academic training antedates the advances which have been made in the chemistry of oxidation. The extensive tables of vitamin values of foods have been completely revised, but with the warning that such tables can never be entirely accurate, since values vary with variety, breed, season, soil conditions, methods of picking, preparing, storing and canning, etc. A number of new illustrations, many valuable tables and abundant references have been added. The list of chapters is now as follows:

PART I—The Vitamins and Avitaminoses.

- | | |
|--|--------------------------------------|
| 1. Vitamins and disease | 5. Nature and Functions of Vitamin A |
| 2. Chemical Nature of the Vitamins | 6. Avitaminosis A |
| 3. Vitamins and Cellular Oxidation | 7. Nature and Function of Vitamin B |
| 4. Vitamin Requirements | 8. Beriberi |
| 9. Nature and Function of Riboflavin (Vitamin B ₂ or G) | |
| 10. Riboflavin Deficiency | |
| 11. Nature and Function of Other Members of the B-Complex | |
| 12. Deficiency Disease Related to the Vitamin B Complex | |
| 13. Nature and Functions of Nicotinic Acid (Vitamin P-P) | |
| 14. Pellagra | 19. Nature and Function of Vitamin E |
| 15. Nature and Functions of Vitamin C | 20. Vitamin E Deficiency |
| 16. Scurvy | 21. Nature and Function of Vitamin K |
| 17. Nature and Function of Vitamin D | 22. Vitamin K Deficiency |
| 18. Vitamin D Deficiency | 23. Vitamins and Infectious Diseases |

PART II—Methods of Assaying Vitamin Sources and of Studying Avitaminoses, Vitamin Values of Foods.

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The book to be returned within five days if not satisfactory.

SignatureM. D.

Address

Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

English Orthopaedics

Fractures and Other Bone and Joint Injuries. By R. Watson-Jones, F.R.C.S. Baltimore, Williams and Wilkins Company, [c. 1940]. 723 pages, illustrated. 8vo. Cloth, \$13.50.

THIS contribution of one of the most versatile orthopedic surgeons in the British Isles meets a great need. As the title infers, it covers the more common lesions of the osseous system, with particular emphasis on traumatic lesions.

Many of the principles are refinements of the teachings of Hugh Owen Thomas and Sir Robert Jones. The author has a most delightful style. His descriptions are clear, and the illustrations are particularly noteworthy. The reviewer would highly commend the chapter on Fractures of the Vertebrae as one of the classics of literature on this subject; and his dissertation on intracapsular fractures of the hip is the most rational presentation that one could desire.

The author is a pioneer in this work,

and his methods are reduced to the simplest formulas compatible with a high percentage of good results. The various sub-



Classical Quotations

• The ox said to the camel, his fellow-slave who refused to help him by sharing his load: "Yet very soon you will be carrying the whole of this load of mine." Then the ox died and the thing happened as he said. That is what happens to the mind when it refuses to let the body relax awhile and rest as it demands; and presently it is attacked by some fever or vertigo, the books, disputations and studies are laid aside, and the mind is compelled to fall sick and suffer along with the body.

Bernardino Ramazzini.

De Morbis Artificum, 1700.

jects are interspersed with paragraphs detailing therapeutic measures which the author has found of value. They illustrate his emphasis on details in aftercare of lesions of the locomotive system. There is not a dull chapter in the book. It is an excellent volume to recommend to hospital libraries. It will be found indispensable to those doing bone and joint surgery. The bibliography is beautifully arranged, so that, aside from the contents of the volume, it is an excellent reference work.

DONALD E. MCKENNA

Gastro-Enteric X-rays

Clinical Roentgenology of the Alimentary Tract. By Jacob Buckstein, M.D. Philadelphia, W. B. Saunders Company, [c. 1940]. 652 pages, illustrated. 4to. Cloth, \$10.00.

THIS work is one of the most complete expositions of the normal and patho-

logical gastrointestinal tract which it has been our pleasure to read. The correlation of radioscopic, radiographic, and pathological findings is particularly interesting and most complete. The presentation of illustrative cases is also most instructive and well carried out.

In addition, we find in this work many references to ordinarily overlooked functional changes particularly with regard to the radioscopic findings. In our opinion, it is the best work of gastroenteric roentgenology since Carman.

The book can be highly recommended to roentgenologists, gastroenterologists and pathologists—in fact, to all who are interested in diseases of the gastrointestinal tract. It should certainly be a part of every roentgenologist's library.

A. L. L. BELL

Fishberg's Circulatory Failure

Heart Failure. By Arthur M. Fishberg, M.D. Second edition. Philadelphia, Lea & Febiger, Inc. 1940]. 829 pages, illustrated. 8vo. Cloth, \$8.50.

THIS second edition of *Heart Failure* appears three years after the first, and is silent evidence of the cordial reception afforded the initial volume.

Advances in the study of decompensation are adequately commented on, and it is notable that much of the new material relates to quantitative estimations of measurement of fundamental physiologic observations. These include velocity of blood flow, venous pressure, circulating blood volume, and determination of cardiac output. For the clinician, this means additional mathematical thinking at the bedside: formulae and figures supplementing the tactus eruditus, the sharp eye and the keen ear.

Such changes constitute a forward step, and if interpreted with regard to the long-established methods of clinical observation, are of inestimable value. Occasionally quantitative mensuration methods reverse previous clinical impressions, but usually they prove of particular value in substituting definite mathematical values for the

use of our relative or comparative adjectives—much, little, few, many, moderate, excessive, etc. The readings in basal metabolic studies provide a parallel instance of the helpfulness of quantitative measurements. As the author remarks, these advances are not "purely academic".

Fishberg writes with an attractive style, characterized by clarity and smoothness. He is conservative in statement, factual in his presentations, and well supported by extensive familiarity with precedent and bibliography. The book is highly recommended.

FRANK BETHEL CROSS

Cardiology for the General Practitioner

Management of the Cardiac Patient. By William G. Leaman, Jr., M.D. Philadelphia, J. B. Lippincott Company, 1940]. 705 pages, illustrated. 8 vo. Cloth, \$6.50.

THE author calls attention to the large gaps that are forming between the physician who is specializing and the one in general practice. This volume assembles the facts most important in the management of the cardiac patient, and well fills the gap in this field.

The author describes physical and laboratory methods, with emphasis on etiology and functional classification. Many illustrations show equipment, technique, orthodiagrams, and roentgenograms. The various types of heart disease are thoroughly presented.

A chapter on an introduction to the study of electrocardiography covers nearly one hundred pages, and presents the subjects more clearly than some monographs. The simple descriptions of the physiological principles involved and of the electrical axis, are excellent. The reproduction of the records is very clear.

Many case histories illustrate important points in diagnosis and treatment, and it is in all respects a splendid book.

W. E. MCCOLLOM

Pneumonia Therapy

Chemotherapy and Serum Therapy of Pneumonia. By Frederick T. Lord, M.D., Elliott S. Robinson, M.D. and Roderick Heffron, M.D. New York,

MEDICAL TIMES, JANUARY, 1941

The Commonwealth Fund, [c. 1940]. 174 pages, illustrated. 8vo. Cloth, \$1.00.

THIS small manual, in keeping with most of the publications of The Commonwealth Fund, is a gem of knowledge. It is, in fact, a third edition of the book *Pneumonia and Serum Therapy* by Lord and Heffron, revised up to the minute in serum treatment and augmented by chemotherapy, especially the sulfonamide group. Its one hundred fifty pages give a complete picture of pneumonia therapy, a brief consideration of definition, etiology, and diagnosis, with interesting and enlightening statistics interspersed in such a manner as at no time to be boring to the reader, an attribute which is too frequently forgotten by the average essayist. Methods of application of both chemotherapy and serum therapy are so well portrayed that no practitioner need entertain a doubt as to procedure in a given case. The reviewer holds that this monograph on pneumonia is in a class by itself; it should be owned by every physician who even occasionally sees pneumonia patients.

GEORGE E. ANDERSON

Medicine for Nurses

Medical Nursing. By Edgar Hull, M.D., Christine Wright, R.N., and Ann B. Eyl, B.S. Philadelphia, F. A. Davis Company, [c. 1940]. 588 pages, illustrated. 8vo. Cloth, \$3.50.

THIS text can be recommended without reservation as a sound and thorough preparation for medical nursing. The method of approach is novel and extraordinarily good, and the general excellence of those sections devoted to dietary management should be specially praised.

MILTON PLOTZ

Child Psychology

The First Five Years of Life. A Guide to the Study of the Preschool Child. From the Yale Clinic of Child Development. By Arnold Gesell, M.D. and others. New York, Harper & Brothers, [c. 1940]. 393 pages, illustrated. 8vo. Cloth, \$3.50.

THE present volume is a newer edition of its predecessor, "THE MENTAL GROWTH OF THE PRESCHOOL CHILD", and is based upon fifteen more years of accumulated experience and investigation.

In part I, the normal development of the newborn infant through five years is

followed. Observations are recorded of motor characteristics, adaptive behavior, language, and personal social behavior. There is also a pictorial survey of preschool behavior.

In part II, detailed analyses of motor development, adaptive behavior, language, and personal social behavior are carried out.

Part III contains the methods of conducting the developmental examination. Actual techniques with the use of illustrative cases are presented. There is a detailed list of selective references.

This book should be of great value to the physician interested in a practical procedure for following the normal progress of the preschool child.

STANLEY S. LAMM

What a Wandering Doctor Accomplished

In Search of Complications. An Autobiography by Eugene de Savitsch, M.D. New York, Simon and Schuster, [c. 1940]. 396 pages. 8vo. Cloth, \$3.00.

THE strictly autobiographical aspects of this book are of interest because of the unusual life and experiences of Dr. de Savitsch before he began the study of medicine. A Russian of the governing class under the Tsars, he fled to Japan at the time of the Revolution, but made his way back to Siberia to serve for a while in the ranks of the White army. Very interesting and exciting. Back now through China, and, with a Chinese visa, across the Pacific to America. Years of real struggle followed, work often of a menial kind, and an attack of pulmonary tuberculosis for which he received institutional care in California. Restored to health, we next find him in an experimental laboratory on problems in tuberculosis and soon the student of medicine. The study of medicine in Colorado and in Chicago was made possible by scholarships and grants in connection with his physiological investigations. He worked for a while in the Pasteur Institute in Paris under Calmette, did postgraduate work in Neuro-Surgery in the Bunge Institute in Antwerp, and had his share of general surgery when he was sent to the Dutch Congo to obtain specimens of brains of those who had died of African Sleeping Sickness. The doctor

started off as a laboratory man but developed into a clinician, specializing in surgery, and located, as the book leaves him, in Washington, D. C. It is interesting to follow the successive postgraduate courses in many European clinics which went to make up his clinical preparation.

The accounts of the attitude of aloofness and condescension assumed by the Russian refugees toward their American environment seems almost unbelievable. We wish we could have had a more complete story of the wonderful mother of the doctor who carried on so heroically in Japan and later in Berkeley, California. It seems unfortunate that the author has chosen to describe many of his clinical experiences as an intern and as a graduate in a facetious mood, and has been willing to include in his book the story of the French surgeon whose indications for surgery was a pain and a pocketbook, and how he (the author) made a diagnosis of hemorrhoids in the trombone player. The jacket lists the many scientific contributions made by Dr. deSavitsch in tuberculosis and in surgery. *Looking for Complications* is an interesting story of an interesting man, but we wish we had a little more of the scientist.

JOSEPH RAPHAEL

Diagnosis for the Student

Physical Diagnosis. By Ralph H. Major, M.D. Second edition. Philadelphia, W. B. Saunders Company, [c. 1940]. 464 pages, illustrated. 8vo. Cloth, \$5.00.

The second edition of Major's book is a good introduction to the fundamentals of physical diagnosis for the student. A preliminary chapter covers the general subject of pain in an interesting, although somewhat sketchy, manner. Subsequent chapters take up the progressive steps in physical examination of the patient in a logical and intelligent way. Unlike some authors of texts in physical diagnosis, Major presents the material in the order in which one naturally examines the patient; that is, by regions and organs, taking up the various modalities of the examination of each. This is a much better arrangement than the artificial one of dividing the whole field of physical diagnosis

under the broad headings of inspection, palpation, percussion and auscultation.

The book is profusely illustrated and the frequent references to, and quotations from, the old masters add to its readability. Students will be grateful for the chapters on the examination of the nervous system and on history taking and recording.

There is still room for modernization of some of the material presented. An example is the discussion of the physical findings in pulmonary tuberculosis. Major still clings to some of the ideas of the pre-Roentgen era, such as the importance of percussion of Kronig's isthmus in early tuberculosis.

All in all this second edition of Major's book represents a distinct improvement over the first, and will undoubtedly enjoy wide popularity.

ALFRED P. INGEGNO

Ballenger on Otolaryngology

A Manual of Otolaryngology and Laryngology. By Howard C. Ballenger, M.D. Philadelphia, Lea & Febiger, [c. 1940]. 302 pages, illustrated. 8vo. Cloth, \$3.75.

This is truly a manual based on the larger text Ballenger's *Diseases of the Nose, Throat and Ear*. For the student and general practitioner it is a far more useful text than the latter or other comprehensive works in this field. This manual should adequately cover all their needs and furnish a splendid understanding of management and procedure conducted by accomplished otolaryngologists in cases of their interest requiring such special care.

CHAS. R. WEETH

For the Diabetic Patient

Simplified Diabetic Manual. With 163 International Recipes. By Abraham Rudy, M.D. New York, M. Barrow & Company, [c. 1940]. 216 pages, illustrated. 8vo. Cloth, \$2.00.

This new edition is completely revised to include all the latest developments in the treatment of diabetes. The author gives special attention to the problems arising with the introduction of the new protamine-zinc-insulin and of the solution of zinc insulin crystals, and discusses in detail the role of heredity and other factors in the development of diabetes. He takes

up the prevention and treatment of various complications in the full light of their importance.

In the dietary part of the book the author considers the use of the higher carbohydrate and lower fat diets. He discusses various foods under different headings and gives a number of substitution charts. He presents a method on how to vary the menus from day to day irrespective of the type of diet the physician prescribes, and how to adjust it to the taste of the various nationalities such as Italian, Armenian, French, etc., and to the dietary laws of the Jewish race.

Over 150 recipes of various nations have been compiled and worked out in such a manner that they can be readily prepared by any patient from his food allowance and by way of substitution.

The role of vitamins and minerals in the treatment of diabetes is taken up in full. The tables of the vitamin and mineral contents of the various common foods in household measures contain the latest values in International units and micrograms of the pure vitamins.

SAMUEL G. SLO-BODKIN

A Phase of Parasitology

The Louse. An Account of the Lice which Infest Man, Their Medical Importance and Control. By Patrick A. Buxton, M.R.C.S. Baltimore, Williams & Wilkins Company, [c. 1940]. 115 pages, illustrated. 8vo. Cloth, \$3.00.

The author of this small volume, who teaches medical entomology in the London School of Hygiene and Tropical Medicine, first discusses the anatomy and biology of this parasite. He then considers the insect as an etiologic factor in Typhus, Trench Fever and Relapsing Fever, following which control methods are outlined.

To one specially interested in parasitology this book may be of interest.

A. E. SHIPLEY

Hawes TB Manual

The Diagnosis and Treatment of Pulmonary Tuberculosis. By John B. Hawes, 2d, M.D. and Moses J. Stone, M.D. Second edition, Philadelphia, Lea & Febiger, [c. 1940]. 260 pages, illustrated. 8vo. Cloth, \$2.75.

In the course of a year many medical books come out of uniform value and worthwhileness. Once in a great while

an exceptionally good book arrives, and we recognize it as of outstanding value. It is in this latter grouping that we may safely place this book of John B. Hawes and Moses J. Stone, *The Diagnosis and Treatment of Pulmonary Tuberculosis*.

This, the 2nd edition, is published some months after the death of the senior author. Of only 260 pages, it manages to encompass about everything that is vital and illuminating concerning our present day concepts of pulmonary tuberculosis—its pathogenesis, its pathology, its symptomatology, its immunology, diagnosis, and treatment. All that is obsolete and redundant has been cut out. All that is of value is retained. It abounds in excellent illustrations and diagrams, and has a summary and bibliography at the end of each chapter. We strongly recommend it to every practitioner of medicine.

FOSTER MURRAY

Nurse's Physical Therapy Manual

Physical Therapy for Nurses. By Richard Kovács, M.D. Second edition. Philadelphia, Lea & Febiger, [c. 1940]. 335 pages, illustrated. 8vo. Cloth, \$3.25.

The value of this excellent book can best be appreciated when we recognize that the study of physical therapy is usually as badly neglected in the curriculum of the average training school as it is in the average medical college even today. Thus the book fills a vital gap in the instruction of the nurse who is called upon to administer physical therapy. The opening chapters are devoted to a brief general introduction to the subject and an interesting historical sketch. The physical phenomena involved in each branch of treatment are described in the chapters devoted to such treatment. Clear diagrams and simple classification wherever possible aid to avoid confusion for the beginner. Despite its small size the book is surprisingly complete, and thoroughly covers all the forms of physical treatment which the nurse or technician will be expected to give. It is clearly printed and well illustrated, and its study should find a definite place in the training of the qualified nurse.

JEROME WEISS

Textbook on Statistical Methods

Introduction to Medical Biometry and Statistics. By Raymond Pearl. Third edition. Philadelphia, W. B. Saunders Company, [c. 1940]. 537 pages, illustrated. 8vo. Cloth, \$7.00.

This book, which is a third edition, is an introduction to medical biometry. In the early chapters, the author deals with the raw data of biostatistics, their recording, tabulation, and graphical presentation. In succeeding chapters, the more elementary principles of statistical methods are discussed, well illustrated by examples and graphical presentation.

This revision has been largely rewritten with the addition of much new material and many illustrations.

It is a good textbook for students in the public health field or for those interested in the field of medical research.

F. L. MOORE

More International Clinics

The New International Clinics. Original Contributions; Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume III New Series Three (September). Philadelphia, J. B. Lippincott Company, [c. 1940]. 358 pages, illustrated. 8vo. Cloth, \$3.00.

The greater part of this latest number of International Clinics is made up of con-

tributions by men connected with Cornell Medical School. Heuer deals with gall bladder disease; Stewart with pulmonary infarction; Plummer with pneumonia; Atkinson with vestibular function tests and Muschenheim with chronic pulmonary disease due to Friedlander's bacillus. In addition, there are good articles on Mikulicz' disease, and a fine review of the sedimentation test by Cutler.

ANDREW M. BABEY

Medical Progress for Popular Reading

The March of Medicine. Edited by the Committee on Lectures to the Laity of the New York Academy of Medicine. New York, Columbia University Press, [c. 1940]. 168 pages. 8vo. Cloth, \$2.00.

This volume contains the fourth series of lectures to the laity presented by the New York Academy of Medicine during 1938 and 1939. Like its predecessors the lectures contained in this volume emphasize the highlights of medical progress. In scope the lectures cover a wide field ranging from health in Elizabethan England to the story of psychiatry. All the papers are well and lucidly written, and the volume as a whole is heartily recommended.

GEORGE ROSEN



BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

Multiple Human Births. Twins, Triplets, Quadruplets and Quintuplets. By Horatio H. Newman, Ph.D. New York, Doubleday, Doran & Company, [c. 1940]. 214 pages, illustrated. 8vo. Cloth, \$2.50.

Congenital Syphilis. By Charles C. Dennie, M.D. and Sidney F. Pakula, M.D. Philadelphia, Lea & Febiger, [c. 1940]. 596 pages, illustrated. 8vo. Cloth, \$8.00.

Congenital Malformations. A Study of Parental Characteristics with Special Reference to the Reproductive Process. By Douglas P. Murphy, M.D. Philadelphia, University of Pennsylvania Press, [c. 1940]. 98 pages, illustrated. 8vo. Cloth, \$2.00.

Developmental anatomy. A Textbook and Laboratory Manual of Embryology. By Leslie B. Arey, Ph.D. Fourth edition. Philadelphia, W. B. Saunders Company, [c. 1940]. 612 pages, illustrated. 4to. Cloth, \$6.75.

Textbook of Biochemistry. By Benjamin Harrow, Ph.D. Second edition. Philadelphia, W. B. Saunders Company, [c. 1940]. 439 pages, illustrated. 8vo. Cloth, \$3.75.

A Surgeon Explains to the Layman. By M. Benmosché, M.D. New York, Simon and Schuster, [c. 1940]. 317 pages, illustrated. 8vo. Cloth, \$3.00.

Methods for Diagnostic Bacteriology. A Complete Guide for the Isolation and Identification of Pathogenic

Bacteria for Medical Bacteriology Laboratories. By Isabelle G. Schaub, A. B. and M. Kathleen Foley, A.B. St. Louis, The C. V. Mosby Company, [c. 1940]. 313 pages. 8vo. Cloth, \$3.00.

Taber's Cyclopedic Medical Dictionary Including a Digest of Medical Subjects. By Clarence W. Taber. Philadelphia, F. A. Davis Company, [c. 1940]. 1488 pages, illustrated. 12mo. Cloth, \$2.50.

A Pioneer Doctor in Old Japan. The Story of John C. Berry, M.D. By Katherine F. Berry. New York, Fleming H. Revell Company, [c. 1940]. 247 pages, illustrated. 8vo. Cloth, \$3.00.

Your Mental Health or Between Mental Health and Mental Disease. For Intelligent Laymen and Physicians. By B. Liber, M.D. New York, Melior Books, [c. 1940]. 408 pages. 8vo. Cloth, \$3.00.

Physiology of the Fetus. Origin and Extent of Function in Prenatal Life. By William F. Windle. Philadelphia, W. B. Saunders Company, [c. 1940]. 249 pages, illustrated. 8vo. Cloth, \$4.50.

Why is the World Sick? By Paul K. Lipps, M.D. Boston, Christopher Publishing House, [c. 1940]. 136 pages, illustrated. 8vo. Cloth, \$1.50.

Fractures and Dislocations for Practitioners. By Edwin O. Geckeler, M.D. Second edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 314 pages, illustrated. 8vo. Cloth, \$4.00.

LATER GONORRHEA

—Concluded from page 10

attacks, the urethra should be carefully explored with the urethral diagnostic acorn bougie (bougie à boule), introducing the largest bulb which will pass to the bladder. On withdrawal, the bulb will establish the presence or absence of a stricture and its caliber. Resistant gland infection within the urethra may require destruction with the cautery through the endoscope. Occasionally persistent infection of urethral glands occurs near the meatus or on either side of the frenum. These can usually be satisfactorily destroyed by fulguration externally with a wire electrode. Pus in the prostatic fluid or gonococci in the prostatic fluid require a course of, at least, twelve to fifteen massage treatments. After this, a rest period for three to four weeks and a repetition of smears is necessary, as a guide to possible need for further treatment.

Sexual exposure should be avoided for one to three months after repeated tests have proven negative; this depending on the severity and duration of the case. The doctor must be cautious in committing himself until he is certain that the stage of cure has been reached. Smears, cultures and endoscopic examination are relied upon as the means of determining cure. There is no field in which good judgment

and discretion are more essential; individualization of the patient is the paramount consideration.

WE have not discussed the complications of the disease, as these have not been considered within the scope of this paper. Occasionally acute or chronic specific urethritis, with or without complications, fails to respond to the usual methods of treatment, and persists in an intractable form. Here artificial fever therapy usually gives very satisfactory results. The patient, however, must be placed in the hands of those expert and widely experienced in this field.

Two fundamental principles in treatment are paramount:

1. Avoidance of powerful antiseptic solutions.
2. Gentleness of manipulation in all procedures.

Although gonorrhea is a penetrating type of infection of the urethra and adnexa, invocation of the general resistance of the body and local tissues is chiefly the method by which the organism is eradicated. Rapid local destruction of bacteria by injected strong antiseptics cannot be accomplished.

References

1. Van Slyke, C. J. and Mahoney, J. F.: *New York State Jour. of Med.*, 40:122-129, Jan. 15, 1940.
 2. Knight, Frank and Shelanski, Herman A.: *Am. Jour. of Syphilis, Gonorrhea, and Venereal Diseases*, 23:201-206, March, 1939.
- 306 PARK PLACE.



Bureau of Social Hygiene, Department of Health

AN intensive program of educational activities will be sponsored by the Bureau of Social Hygiene and cooperating agencies during Social Hygiene Week, January 29th through February 6th, 1941. Meetings have been arranged for physicians in practice, medical students, nurses,

laboratory and public health workers. The program is under the general supervision of Dr. C. C. Pierce, Regional Director for the U. S. Public Health Service.

All sessions will be held in the auditorium on the second floor of the Health Department building, 125 Worth Street, New York City. No registration is required. There will be demonstrations, motion pictures, lantern slides, and slidefilms.

CANCER

—Concluded from page 24

nineteen days after the complete hysterectomy for cancer of the uterine fundus. Her expectation of life at the time of that procedure was 23.41 years. She lived 42.7 per cent of her life expectancy. The atherosclerotic and hypertensive heart disease and the diabetes mellitus undoubtedly con-

tributed to the shortened postoperative survival.

Summary

Living			* 11
Dead			7
of cancer	6		
of other causes	1		
	7		
Lost			4
			22

* One with late recurrence.

CANCER

—Concluded from page 22

- 8.—Conrad R. Lam. Ann. Surg., March, 1940. 111:403.
- 9.—G. Lephene. Deutsch. med. Wchnschr., June 16, 1933. 59:916.
- 10.—Karl M. Mårtensson. Arch. Surg., April, 1937. 34:650.
- 11.—Alex B. Ragins. Amer. Jour. Cancer, April, 1937. 29:722.
- 12.—J. Seide and W. Geller. Arch. f. Verdauungskrank., July, 1933. 54:71.
- 13.—O. Spitzenberger. Wien. klin. Wchnschr., November 24, 1933. 46:1421.
- 14.—P. G. Wakeley. Brit. Med. Jour., August 10, 1935. 2:243.
- 15.—Richard Warren and Franklin G. Balch, Jr. Surgery, May, 1940. 7:657.



1941 Essay Contest

THE Mississippi Valley Medical Society offers annually a cash prize of \$100.00, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Certificates of merit may also be granted to the physicians whose essays are rated second and third best. Contestants must be members of the American Medical Association who are residents of the United States. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley

Medical Society at Cedar Rapids, Iowa, Oct. 1, 2, 3, 1941, the Society reserving the exclusive right to first publish the essay in its official publication—the MISSISSIPPI VALLEY MEDICAL JOURNAL (incorporating the RADIOLOGIC REVIEW). All contributions shall not exceed 5000 words, be typewritten in English in manuscript form, submitted in five copies and must be received not later than May 1, 1941. The winning essay of the 1940 contest appears in the January, 1941 issue of the MISSISSIPPI VALLEY MEDICAL JOURNAL (Quincy, Ill.) Further details may be secured from

Harold Swanberg, M.D., Secretary,
Mississippi Valley Medical Society,
209-224 W. C. U. Building, Quincy, Illinois.



Physicians Needed For Army Service

The physician, like every other American, has become actively interested in our national security and stands ready to contribute his services as required for military preparedness.

EDITORIALS



Browning.
of Brooklyn

Dickinson
1935

William Browning

1855-1941

Wel knew he the olde Esculapius.
Chaucer: *Canterbury Tales*.

DOCTOR BROWNING won eminence as an author of authoritative works in the neurological field—"The Veins of the Brain and its Envelopes," 1284, "The Epileptic Interval," 1893, "Circulation in the Central Nervous System," 1897, "The Thymus and Stammering," 1915, "Medical Heredity," 1925; as a member of a famous teaching faculty in the later nineteenth century, during which time he introduced spinal puncture in America; and as a bright particular star in the medical library field. As early as 1891 he was rapidly laying the foundation for the vast present Library of the Medical Society of the County of Kings and Academy of Medicine, Brooklyn, starting with a nucleus of books not much more impressive or promising than what the cathedral library at Hildesheim or the library of the cloister at Alt-Zelle, in the twelfth century, must have been. Until his dying day, literally, he remained the Brooklyn library's *genius loci*.

We think his achievement with books on the colossal scale chiefly earned Doctor Browning his accolade. For the medical library, properly regarded, is the red marrow and blood bank wherefrom the profession is vitally replenished. Every such institution is a pumping station in the great circulatory system whose vascular peristalsis—as the late Doctor Edward E. Cornwall would have said—starts at the great cardiac center in Washington, the Library of the Surgeon-General's Office, and ends in the doctor's cerebrum, via the books and journals of Doctor Browning's splendid creation.

"Greater even than the greatest discovery is to keep open the way to future discoveries."

Some Historical Aspects of Tuberculosis

LEWIS J. MOORMAN has called attention to the suggestive fact that many

of the great physicians who were instrumental through the ages in assembling knowledge concerning tuberculosis were themselves tuberculous and not infrequently died of it. He believes that they, like so many nonmedical celebrities, owed some of their exceptional driving power to the psychic stimulus of this disease (*spes phthisica*), so that in a certain sense the progress of medicine has felt its creative influence. This point, so far as we know, is a strikingly original one.

Moorman offers some suggestive evidence as to tuberculosis in the case of Galen. The same likelihood exists in regard to Sylvius. Galen was largely responsible for the fifteenth century renaissance of medicine, while Sylvius, in the seventeenth century, demonstrated pulmonary tubercle.

In so far as Bichat (dead of tuberculosis at thirty-one) directly and indirectly influenced scientific medicine, including increased knowledge of tuberculosis, he may be ranked in the category under discussion.

Laënnec (1781-1826) was himself tuberculous. He advanced diagnosis to a high point, for he revived Auenbrugger's forgotten percussion and invented the stethoscope. Before he was twenty-one he had laid the foundation for his profound knowledge of tuberculosis. Dying at forty-five, he left us "practically all that is now taught with reference to the diagnosis of diseases of the thorax."

Louis (1787-1872), great French clinician and teacher, gave up private practice at thirty-four to pursue his investigations of tuberculosis, which eventuated in the famous "Researches on Phthisis." An example of the tuberculous savant, Louis "inhabits in spirit the wards of every well-ordered hospital" and "his influence is evident wherever the principles of clinical medicine are taught."

In our own day, the tuberculous Trudeau comes at once to mind with his discovery of the importance of rest in bed as an aid to recovery. This father of the sanatorium



**ESTABLISHED
IN 1872**

movement in America gave us the only known method of curing the disease.

Upon Moorman's long list appear such celebrated names as Willis, Withering, Rush, Ehrlich, Bowditch, Baillie, Dettweiler, Stoll, Locke, Maimonides, Tchekhov, Flick, Biggs, and Solly.

Doctor Moorman has confronted us with a strange paradox. The same disease that depleted its exceptionally endowed medical victim stimulated him to unwonted mental activity—a dual influence of vast significance.

In his book "Tuberculosis and Genius" (Chicago University Press, 1940), already reviewed in this journal, Doctor Moorman devotes his attention to other than medical celebrities furnishing illustrations of the curious duality noted in this disease.

Medical Mandarins

A mandarin is a Chinese public official of one of the nine higher classes entitled to wear a button on the hat.

ALL of us, no doubt, have received much literature from organizations representing various dubious causes claimed to be related in one way or another to medicine. Not infrequently the letterheads of these organizations carry names which

—Concluded on page 71

The Doctor **AND THE STATE**

LANNING E. LIKES, M.D., F.A.C.S.

Lamar, Colorado

WE have heard much of Medical Economics during the past few years. We have thought much about it; it has confronted us during every waking moment. We have formed our opinions, and have reached or attempted to reach a solution of its problems. Two definitions are in order.

Socialized medicine is a broad term. Anything is socialized which is supported by people as groups, rather than as individuals. A public library is a socialized institution because it is supported by taxpayers. Medicine may be socialized in any one of several ways. We have socialized medicine when the government supports tuberculosis hospitals and free medical care for the indigent, through taxation. We also have socialized medicine when people join insurance funds, under which the well of a group help to pay the medical expenses of the sick of the same group.

State medicine is that form of socialized medicine under which medical services are furnished by government employees who are paid out of tax funds, much as public education is furnished by teachers employed by the government and paid out of public funds.

MANY social workers, actuated by the best of motives, have long been pressing for state medicine in some form. It touches our pride as well as our compassion to hear of folk in the richest country in the world without proper care when they are ill because they are too poor to pay for it. These feelings are intensified when we are told that nearly half of our population gets no medical attention whatever.

If these hardships could be done away with by setting up a system of state medicine, that would be a powerful argument in its favor. Unhappily, the experience of nations which have given such systems a thorough tryout is anything but encouraging.

The health of mankind is inextricably bound with every social and economic problem that arises. It would therefore, be folly to deny that the government has any stake in the health of the people. A state, however, is made of individual citizens. Psychology teaches us that progress depends largely on the maintenance of individual invention, ingenuity and initiative, which are still respected in democracies such as ours.

THOSE activities which the individual cannot conduct for himself, let the state undertake. If our people are too stupid to provide against dependency in old age or because of unemployment, let the state force them to do so. But let them, as much as possible, be responsible to and for themselves.

Already the dangers of too great centralization of complete bookkeeping and responsibility for handling of funds in Washington are beginning to be apparent. We may yet see in this kind of social security the greatest financial fiasco the world has even known.

There is a place for government in medicine. It is the place of government to govern; to decide the rules under which the game shall be played. *It is not the place of the government to make the rules, play the game, and umpire all at the same time; and besides to make the people pay—and most often pay excessively—for participating in the spectacle.* Doctors must practice medicine because that is the doctor's job. Doctors know better how to practice than untrained economists, legislators, or politicians. No system devised for entrance of government in medicine will work or will satisfy the people unless doctors find it workable and capable of permitting satisfactory service.

IN state medicine the practitioner sees at once certain conditions which are inherent in the system and cannot be removed, and which he thinks tend to detract from its usefulness. They make for less adequate medical work than he can give, and therefore are against his interests and against the interests of his patients.

This is done first by hampering the establishment of the true patient-physician relationship. This relationship the practitioner regards as basic and essential for successful medical service. He must have the full confidence of his patients; built partly on his reputation, but also on the way he measures up as time goes on as—responsible to his patient, first, last and all the time.

Again, under state medicine, the physi-

cian's office tends to be overcrowded so that he has less time than is required to carry out in proper fashion his work in diagnosis and treatment, and in the post-graduate study he must keep up throughout his medical life. To have to do a poorer medical job than he knows how to do means dissatisfaction to him and ultimately to his patients.

THE practitioner is interested naturally in any measures that can be taken which would help more people to get good medical care. There are other ways, some of which are already at work, and others can be set up which would not have the defects of state medicine or compulsory health insurance.

But whether for weal or woe, the problem of state medicine is close at hand and must be met. The modern doctor has become a modern Hamlet. He is facing the dilemma that confronted his Shakespearean prototype three centuries ago. "To be or not to be?" His professional practice, even his economic existence, are at stake in a stricken and changing world. He is sailing a battered ship on a stormy sea. Shall he "take up arms against a sea of troubles, and by opposing, end them?" Or shall he seek a lighthouse and a harbor and make a happy landing?

THROUGHOUT the history of the development of state medicine the medical profession as a whole has insisted that the old order in the practice of medicine should be preserved. In the changes which are necessary, organized medicine must take the lead and assume leadership in medical and public health matters. If organized medicine does not do this, lay groups will do it for us. Undoubtedly, there is a definite, distinct problem of vital interest in the care of the indigent. *Unless we prepare forthrightly and intelligently to meet that problem, we must eventually cheapen the whole character and standard of medical practice.*

Such a philosophy is in keeping with the long-standing tradition of individual initiative. Either we must exercise that in-

initiative in the solving of these pressing problems of medical economics or they will be solved, not entirely to our liking, by lay organizations not having a proper understanding of the practice of medicine. This is a fact that can not be evaded. The problem is real. It must be met, if not by us, by someone else. If we allow it to be met by someone else we commit a grievous and inexcusable blunder the effects of which may rebound through the ages to the detriment of mankind and to our own professional shame.

IT is not too late for the medical societies to take or regain the leadership in supplying a better curative and preventive medical service. At any rate, they have become aroused to the fact that something must be done. They are seeing the specter of state medicine, and some there are who are more or less resigned to something of the sort.

The progress which has been made in better care of the sick and injured has been brought about by the initiative of a free profession unstified by bureaucratic rules and regulations. The progress in this country in the quality of individual treatment both medical and surgical is something of which the profession may be proud. Why can't that same driving force be harnessed to bring about better medical service, curative or preventive, to everybody alike whether rich or poor?

On the shoulders of the physician is rightly placed the burden of caring for sick persons and the prevention of disease, whether it be done gratuitously or for adequate fees. If he does not accept this burden and adjust it not only for his own welfare but also for the welfare of the whole country then he is shirking his duty, and the high esteem which he now enjoys will be dimmed.

THE whole problem is complicated. It will require a great deal of study. Certain things should be accomplished. Persons must be taught that they should help to carry the financial burden individually as far as possible. Some of them are in no economic condition to bear their share and should be assisted. It should be worked out with patience by medical societies, hospitals, and public health authorities in friendly cooperation.

It is possible that state medicine is inevitable. I do not think so. But it is highly probable unless certain conditions are righted promptly and fairly. If state medicine does come, and if we see that we cannot avoid or escape it, let us not pout or sulk. Our role in such an event would be directed to making the best of a bad situation. If it must come, we must pitch in and make it work to its highest potential degree; fight its evils from within, and bring about, through whatever system may be devised, the best possible medical service of which we are capable. We can do no more. We should not permit ourselves to do less.

For the present, however, we must be unrelenting in opposing the advance of state medicine. Study, educate, inform—that is the nature of our opposition. And in the meantime we can do no better than to engage ourselves in the important work of eliminating existing evils and incongruities. *That is our best defense against state medicine: to eliminate the necessity for its establishment.* Such a program does not compromise or modify that type of medical practice which preserves the personal relationships between physician and patient, that maintains the practice of medicine as a profession, and that has withstood the test of centuries and must be preserved for the best interests of both the public and the medical profession.



A Modern Health Program

EMBRACING EVERY PHASE OF MEDICAL PRACTICE

WILLIAM THAU, M.D.

Boston, Mass.

AT this time when socialized and state medicine are being so widely discussed and when efforts are being made to enact national legislation which may affect every individual practitioner, it is appropriate to consider what could be done to bring about a much desired improvement in the distribution of medical care without disturbing the personal relationship between patient and physician and without lowering the standards of scientific medicine.

It is with the aim of retaining and, if need be, enlarging the present facilities for preventive and curative medicine, as well as for research, that the following plan has been evolved. It requires no legislation, no compulsion, and no payments for time lost through sickness, but a ruling or ordinance by local authorities which would administer it with the available or with an increased personnel and, of course, also with the full cooperation of both the profession and the public.

This plan, of which the underlying principle is the patient's choice of his physician, comprises three essential features:

I. A single annual health report of every individual,

II. Public Health Education, and
III. Compensation for every physician and hospital for services rendered.

I. The Annual Health Report

1. **The purpose of the report:** The annual health report for every individual, or at least for the greater number of individuals, is the most important feature and, indeed, the basis of this plan. The other two features are designed to make this plan possible and effective.

In Massachusetts and no doubt in most states, every motor vehicle is thoroughly inspected twice yearly, and a report of its condition is filed with the proper authority. Well, just as the best driver could not stop in time an automobile with faulty brakes, so the best vehicle could not be safely operated by an abnormal driver. It is a well known fact that many drivers die of cardiac or other diseases while operating their vehicles. And similar accidents occur also during the performance of other duties. It ought, therefore, to be regarded as fair, yes, even as indispensable, that such drivers or any other person called upon to do strenuous physical and mental work be thoroughly examined once a year and their condition reported to proper authorities. And since any individual may

at one time or another be called upon to perform such duties, and moreover, since children and the aged are more likely to be affected by diseases, a single annual thorough examination, recorded and filed, appears a necessity.

2. The reliability of the report: The family physician is the most appropriate and the most reliable person to make the necessary examination and report. The simplest way to achieve prompt results in carrying out this plan is to begin with the school children from the kindergarten, and follow through the college years. Every child would be expected to bring such a health report from the family physician. This would enable the school physician to know better the health condition of each child under his supervision, and to carry out more efficiently the duties assigned to him, namely, school hygiene. He could concentrate more on educating the nurse, the teacher, the parent, and the pupil, while the family physician, to whom the child could be referred whenever necessary, would do all the work which is properly his. Those who have no family physician would, in accordance with the principle of this plan, be able to choose any practitioner, clinic, or dispensary for such an examination. During these examinations, the physician and specialist would have an excellent opportunity to show every parent, guardian, and relative the necessity for such an examination so that they also might take it. As to adults, similar arrangements could be made. Employees would be expected to bring a note from their family physician, stating that the annual examination has been made, and the report filed.

3. The contents of the report: The report should be based on a most complete history, and on a real health examination tending to find not only physical defects, but also to test the functioning of every organ. It should include records of tuberculosis tests, of all necessary immunizations (against smallpox, diphtheria, whooping cough, typhoid, undulant fever, etc.—depending on the patient's age and on the district), as well as results of lab-

oratory analyses of urine, blood (Wassermann), sputum, and any necessary body matters together with the report of the x-ray findings, and reports of complete examinations by an ophthalmologist, an otorhinolaryngologist, a psychiatrist, and a dentist, and in particular cases, by such specialists as the family physician may find necessary. The forms to be filled out by the examining practitioner would be furnished by the local authorities, which would receive a carbon copy of each report containing the identification number of the record, but not the patient's name, which would appear only on the original copy remaining with examining and treating physicians. Each report should contain a note whether it is the first annual report of a given patient, and if not, the record number of the last report, or the name of the previous physician who made such a report, so that trends of conditions and the health progress of individuals may be followed up and studied through the compiled annual reports over a long period, or even of a whole life record. Finally, the report should contain the recommendations made by the physician, who would assume full responsibility for treatment and correction of any defect. In the case of a school child, the physician would only transmit to the school physician a note stating that he had made the annual examination and report, and whether the given child may participate in all or only in some of the school activities, or whether he should be taught in special classes, or be exempt from certain duties. In the case of adults, the employer, or plant physician, would be informed that such a report has been filed, and whether or not the individual person may do certain work.

4. The nature and value of the report: The annual reports would be strictly confidential. The carbon copies of the original records would contain only the record number and name of the examining physician, but not that of the patient. Access to such records would be permitted only for the purpose of follow-up, or research activities. The local health authorities would keep such records on file and

report annually the number of normal and abnormal conditions to the state authorities who would in turn forward the assembled data to the federal health service where all the nation's statistics could be compiled and published.

5. The adaptability of the report: The plan for such an individual annual examination and report could be adapted by any community. The problem of rural districts could be solved by increasing the existing facilities with the help of local, state, and national authorities, by making the living conditions for a physician more attractive, and also by the cooperation of medical schools which could establish rules that every graduate should spend one year in rural practice.

II. Public Health Education

HEALTH education is a most useful means to carry out any health program. Indeed, no health program can be successful without it. It is beneficial to many physicians, and indispensable to most if not to all laymen. It is an established fact that, no matter how good a product may be, to be in demand, it must be known to the people. Health education aims to show the advantages of health and of health practices, and as such is the most effective instrument of preventive medicine.

For this plan as for any other health program the full cooperation of both the profession and the public is absolutely necessary, and the best way to obtain it is through health education. While a platform, radio, and lay or medical press campaign would be most helpful, if kept alive for some time through frequent reports of progress, it is chiefly the family physician, who, being more than anybody else in touch with and able to influence the patient, is in the best position to assure good results for this or any other health program.

III. Compensation

IT is impossible to estimate the cost of such a program before it has been at least one year in operation. It seems certain, however, that it would be far less

expensive than any other plan because most people would see their private physician and pay for his services. Those unable to pay for private consultations might also be allowed to choose their physicians and specialists (either in their offices, or in the hospitals), who could be compensated by the authorities on a per capita, or part-time, or full-time basis according to a pre-arranged schedule. It is only just that the physician who has always given freely of his time and services for charitable purposes should receive adequate compensation for his work. This expense would be small, indeed, if compared with the benefits it would assure.

Comment:

THIS program contains no provision for payments for time lost during sickness, or disability for any cause. Such payments may be assured by small salary deductions for a health or accident insurance. If put into operation and well administered, the above program would have the following advantages:

1. Medical care would be extended to people in cities and towns who, because of ignorance or lack of facilities, never before asked for or received it.
2. Many physical defects in both paying and non-paying patients could be discovered and corrected, and thus public health greatly improved.
3. Tuberculosis testing, and immunizations against any disease, could be efficiently carried out everywhere, particularly in districts which have constituted a menace to public health.
4. The almost eternal problem created by deficient vital statistics would be solved through the cooperation of physicians participating in this program.
5. The income of every practicing physician would be bound to increase.
6. There would be no plethora of physicians.
7. After a short period of a few years' operation of such a program, the health of the people would be bound to improve, and curative medicine would gradually give way to preventive measures and health education.

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Some Comments on

COLLES' FRACTURE

OTHO C. HUDSON, M.D., F.A.C.S.
Hempstead, N. Y.

WE will not discuss compound fractures but confine these remarks to closed fractures of the lower end of the radius. The fracture may be comminuted or simple.

The only important points in the anatomy of this region are that (1) The lower articular surface of the radius makes an angle toward the palm of about 15 degrees, with the long axis of the bone, and (2) The radial styloid is placed at a lower level than the ulnar styloid.

The mechanism of injury is usually a fall on the outstretched hand.

The physical findings are deformity, with a radial shifting of the hand, and displacement backward (silver fork deformity), impaired function, swelling and tenderness.

The x-ray reveals a simple or comminuted fracture of the lower end of the radius, with backward angulation of the lower articular surface of the radius and radial shifting of the hand. The ulnar styloid is frequently broken off.

REDUCTION must be done to restore the alignment of the bone and give a cosmetic wrist. We believe this applies to all cases of Colles' fracture, regardless of age. If the deformity is unreduced and left to heal, the angulation

backward increases, especially in the aged. A good reduction also insures better function.

The reduction should be anatomical and is done by manipulation under some anesthesia, whether local or general. When local is used, the hematoma should be injected with 20 cc. of 1 per cent novocain, and the ulnar styloid and lower radio-ulnar joint, with 10 cc. also. Twenty minutes waiting allows thorough anesthetization and a painless reduction is then possible.

The postoperative immobilization is maintained by plaster, from just proximal to the distal palmar crease to the axilla, with the forearm in complete supination and the hand in palmar flexion and ulnar deviation.

Plaster is changed at the end of two weeks and the hand straightened, but kept in ulnar deviation. Plaster immobilization is continued until union is solid, which is about 8 weeks in simple, and 12 to 14 weeks in compound fractures.

It is generally stated that the elbow need not be immobilized in plaster after a Colles' fracture. This is so in a simple fracture but is not so in a comminuted one. Also, if the elbow is not immobilized, the patient has a great deal more pain, due to motion at the lower radio-ulnar joint. The hand is improperly kept pro-



Figure 1

H.W. Pre-operative plate. Taken January 31st, 1940. Anterior-posterior position.

nated, which pronation gives a loose lower radio-ulnar joint that is painful for months after the fracture heals. This painful radio-ulnar joint and looseness of the lower end of the ulna can be prevented by fixation of the elbow with the forearm in supination.

IMMEDIATELY after reduction, the patient is instructed to completely make a fist vigorously, to elevate the arm above the head, and actively contract the biceps tendon 50 times per hour. This active muscle use keeps the normal muscle tendon sense active, so that stiffness in the shoulder, elbow, wrist and fingers does not occur. Such use must be effected immediately and continue daily and hourly, for any swelling that occurs acts as so much glue, binding down the tendons and joints

and adding months that are unnecessary to the convalescence.

Active muscle usage can be carried out only if the fracture is adequately splinted and is painless. When the plaster is then removed, there is 35 to 45 per cent normal painless motion of all immobilized joints. In addition, there is 75 per cent normal

Figure 2

H.W. Pre-operative plate. Taken January 31st, 1940. Lateral position.



MEDICAL TIMES, FEBRUARY, 1941

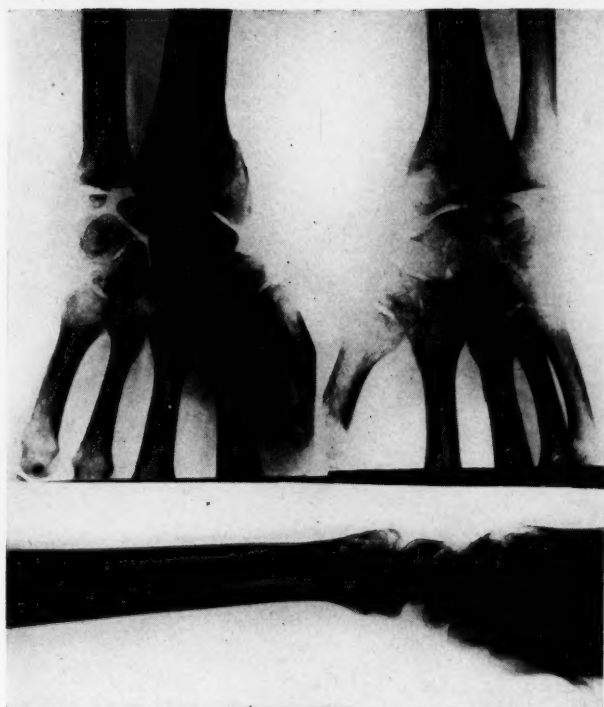


Figure 3
H.W. End result. Taken May 27th, 1940. Anterior-posterior and lateral positions.

strength in the hand grip. Function returns to normal in 4 to 5 weeks with hot soaks and continued use.

Comminuted fractures are, at times, difficult to reduce. Skeletal traction through the metacarpals is an aid but interferes with finger function to some extent.

Dr. Bartels suggested, two years ago, that a reduction could be done manually, and finished by using a circular elastic band about the wrist.

An ordinary rubber bandage, 3" wide, is tightly wound about the wrist, below the styloid processes. As the tension is increased, the hand is forced into ulnar deviation and the smaller fragments of bone into place. Additional force may be

used by tapping the bandage with a hammer if necessary. The bandage is then removed and plaster applied.

The complications that may occur are (1) Painful and lax lower radio-ulnar joint. (2) Rupture of extensor tendons to the thumb. (3) Stiff and painful shoulder. (4) Displacement of small fragments.

A painful lower radio-ulnar joint can be prevented, as previously stated, by plaster fixation, extending above the elbow, with the forearm in supination.

Rupture of the tendons cannot be prevented and necessitates surgical repair.

Sore and stiff shoulder is preventable by active use during the entire period of treatment.

Occasionally, small fragments of bone cannot be replaced and must be removed.

The end result in a Colles' fracture should be a good cosmetic appearance of the wrist and complete function. If function is not complete, it certainly should not be more than some loss of dorsiflexion and palmar flexion.

As a summary, the following points in treatment have been emphasized. (1) Anatomical reduction should be obtained whenever possible. (2) Complete immobilization should be continued until bony healing has occurred. (3) Immobilization, including the elbow with the forearm in supination, is necessary in comminuted fractures, and prevents a complication in simple ones. (4) Active vigorous muscle usage by making a fist, con-

tracting the biceps muscle, and elevation of arm above the head, and rotating the shoulder, assures one of good function and prevents joint stiffness. (5) Another meth-

od of reducing comminuted fractures, with the aid of an elastic rubber bandage, is described, as suggested by Dr. W. P. Bartels.

Read before the Associated Physicians of Long Island at East Williston, N. Y., Oct. 1, 1940.

PROFESSIONAL BUILDING.

Discussion—Dr. Frank N. Dealy:

Next to the ribs, fractures of the lower end of the radius are more commonly met with than fractures of any other bone. There is hardly a physician who has not seen a Colles' fracture, and still at first these were all considered to be dislocations rather than fractures. Pouteau was the first in 1783 to describe this injury as a fracture, but the original conception persisted, and even though Colles himself described it as a fracture in 1814 it was not generally accepted as such until 1830. Since that time the details of the fracture have been everywhere discussed, as they are today through the presentation by Dr. Hudson of this excellent paper.

In order to obtain a proper conception of the fracture itself, it is necessary, of course, as Dr. Hudson has brought out, to have an understanding

of the anatomical considerations. The facts that the widened lower extremity of the radius is of softened cancellous bone, that it, together with certain bones of the carpus, really make up the wrist joint, and that the radius in pronation and supination revolves about the ulna as an axis, are all of importance, and the fact that the articular surface of the radius faces forward as well as downward must never be forgotten.

As far as the mechanism of injury is concerned, the fracture may occur, first by a force extending directly through the carpus and along the shaft of the radius in such a way that the bones of the

Figure 4

H. N. Pre-operative plate. Taken February 12th, 1940. Anterior-posterior position.

Figure 5
H. N. Pre-operative plate. Taken February 12th, 1940. Lateral position.



carpus crush the lower end of the radius between these and the radial diaphysis and frequently split, as by a wedge, the articular surface of the radius, thus producing a comminuted lower fragment. If the line of force, however, is not so direct, but if the forearm makes contact with the ground at an angle probably of less than sixty degrees, there is a decomposition of the lines of force, and if the tendons and ligaments about the wrist joint hold, the bone is fractured at its weakest point. In this fracture, as Dr. Hudson has brought out, the distal fragment with the firmly attached carpus and hand is displaced backward and radially as well, and there is also a rotation of this fragment on a transverse axis, so that the anterior surface of the radius no longer looks downward and forward but downward and backward. The lower radio-ulnar joint is disrupted, the tip of the ulnar styloid may be avulsed, and the lower end of the ulna itself made much more prominent. This deformity, together with fullness on the anterior aspect of the wrist, due to infiltration of the pronator quadratus muscle, and loss of concavity of the lower anterior aspect of the radius, with elevation of the radial styloid, as well as pain and tenderness, suffice for the diagnosis.

Reduction of this deformity must be actually effected by proper and suitable manipulation. Reduction of fractures does not occur by wishful thinking, but can be accomplished only through the proper application of definite principles. Anesthesia, general or local, as emphasized by Dr. Hudson, is essential in practically every case in order to effect reduction. Traction with correction of the posterior displacement of the lower fragment, correction of the axial rotation of that fragment, anterior flexion of the wrist with ulnar deflexion of the hand so as to replace the radial styloid in its normal position, are all essential. This is usually done under the fluoroscope. It is my habit to immobilize the wrist in this position, or in whatever position under the fluoroscope the reduction and maintenance of reduction seem most easily to be accomplished. I am interested in Dr. Hudson's advocacy of the supine position of the forearm, especially in the comminuted cases, and feel with him that through the action of the pronator quadratus, thus made tense, the apposition of the lower ends of the radius and ulna may be better brought about and the radio-ulnar articulation made and kept more snug. In the comminuted fractures also, which are so difficult of proper reduction, I feel that there is considerable merit in his suggestion of the use of the elastic rubber bandage which, through its elasticity, gently forces the smaller fragments into normal position, the bandage then being removed before the application of plaster. In these comminuted cases also, immobilization of the elbow as well as the wrist may be of considerable help and can readily be accomplished by the application first of sugar-tong moulded plaster splints, one extending along the forearm behind the elbow and down the anterior aspect of the forearm, and another passing down the lateral aspect of the arm under the elbow and up on the inner aspect of the arm. These are of easy application and can be readily removed.

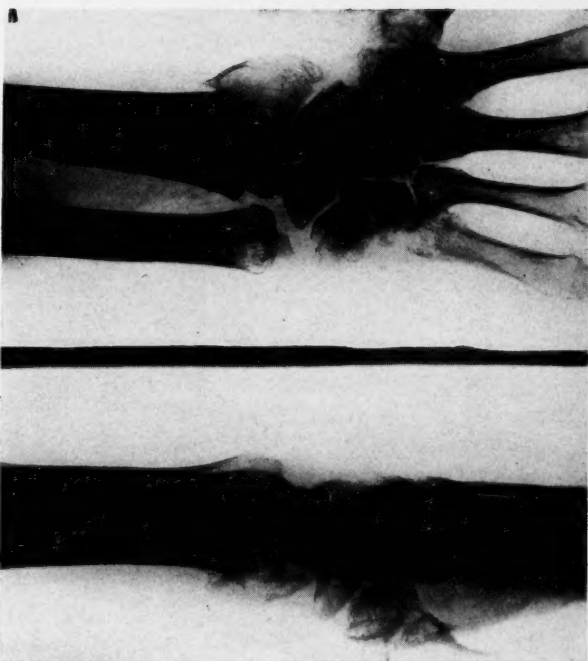


Figure 6
H.N. End result. Taken May 3rd,
1940. Anterior-posterior and lateral positions.

Providing for freedom of action of the fingers is essential, and the constant use of the shoulder muscles as advocated by Dr. Hudson would doubtless reduce disability. I think it important, however, not to immobilize these cases too long, for in young adults union is fairly prompt, though in comminuted fractures of elderly people union may be long delayed. In some of these latter cases, especially with actual pulverizing of any fragment, restoration to the normal cannot be made and some deformity and disability are inevitable.

Late disability has often been due to prolonged fixation. I believe it advisable, therefore, to remove the splints at intervals for active motion as union progresses, but each case must be decided on its own merits and every effort made to restore function as soon as possible. Other causes for late disability are, of course, the failure to reduce the fracture in the first place, or failure to maintain reduction after once accomplished, and for this reason, in difficult cases, I believe it advisable to x-ray at intervals after reduction to make sure that the position of the fragments remains satisfactory. Arthritic complications, of course, may interfere considerably with convalescence and be the cause for much disability. The uncorrected loosening and displacement of the lower radio-ulnar joint, however, is perhaps one of the most important causes for late disability, and if this can be avoided through the use of supination, as Dr. Hudson suggests, the presentation of this subject from this aspect alone will have been much worth while.

It has been a pleasure for me to hear Dr. Hudson's presentation of this subject, and I am grateful for the opportunity of discussing it.

Hematuria

ANALYSIS OF ONE HUNDRED CONSECUTIVE CASES AS THEY APPEARED IN THE OFFICE

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and

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IT should be noted in the beginning that no attempt is made in this presentation to establish any absolute statistics concerning the incidence of the various conditions found in any large series or any other community. In most instances the patient had seen blood in his urine. In some, the patient had had a urinalysis and had been told by his physician he had blood in his urine and should have a urological investigation. It should further be stressed in the beginning that hematuria is not the first symptom in many of the conditions found in this study. Hematuria as encountered in general practice has a much lower incidence than in urological practice. It is relatively an uncommon condition in general practice. It occurred in only 3.9 per cent of the general admissions to the Pennsylvania Hospital, as quoted by Hinman (1). The fact that it occurs so frequently in specialty practice should be obvious from a statistical standpoint. In Mackenzie's (1) 3800 patients with urological disease 21.6 per cent had hematuria. In our own series 14.8 per cent had hematuria.

Our last 100 cases of hematuria were studied between January, 1939 and September, 1940 and therefore permit no

conclusions as to end results. They have been divided arbitrarily into renal, ureteral, vesical and urethral sources.

There were twenty-two renal lesions encountered of which injuries and inflammatory processes constituted six. Six more were due to obstructions from aberrant vessels or ureteral strictures. There were eight renal calculi, two carcinomata and six ureteral calculi. One must bear in mind constantly that hematuria is not a cardinal symptom of most of these conditions and that patients who come in for urological study do not routinely complain of hematuria.

There were thirty-four bladder lesions of which two were diverticula. There was one case of hemorrhagic cystitis. I think it noteworthy that a diagnosis of cystitis was made only once as a primary cause of hematuria. We are inclined to think that cystitis is a secondary rather than a primary disease, which perhaps accounts for its rarity in our series. Thirty-one of the thirty-four bladder lesions may be considered neoplastic or pre-epitheliomatous. Of these there was one leukoplakia which in spite of recent work must be considered as a pre-epitheliomatous lesion. There was only one benign papilloma of the bladder.

This I am sure will be a revelation to many of us who have been inclined to assume that most patients who have a history of bleeding for more than a few weeks or months probably have a papilloma. There were six malignant papillomata. The difference between a malignant papilloma and a papillary carcinoma of the bladder is one to which we might devote considerable time but it has no place in this paper. There were six malignant papillomata which had bled from three days to four years. All of these were operable.

Twenty-three carcinomata were encountered. There were three adenocarcinomata, the longest symptomatology being two years, the shortest three months, an average of ten months. None of these cases were operable. There were eight epidermoid carcinomata; the longest had bled for one year, the shortest one day, or an

average of three months. Five of these eight were inoperable.

There were seven infiltrating carcinomata, the longest bleeding time two years, the shortest one month, or an average of about five months' hematuria. Of this group one was operable.

There were four papillary carcinomata, the longest period of bleeding being four years, the shortest one week, or an average of eighteen months. All of these were operable.

There was one unclassified carcinoma apparently originating in a diverticulum of the bladder. Bleeding appeared three days before this patient was seen and an operable carcinoma was found.

The urethra and prostate gland were the sources of thirty-four hematurias, of which one each was explained by diverticulum and congenital stricture. Chronic in-

Summary of 100 Hematuria Cases

Summary of 100 Hematuria Cases			
Kidney:			
Injury	{ Contusion	1	22
	{ Rupture	1	
Inflammation	{ Pyelonephritis	1	
	{ Renal pelvic ulcer	1	
Hypoplasia—	Turpentine nephritis	1	
Hydronephrosis	Tuberculosis	1	
Due to:			
	{ Aberrant vessel	2	
	{ Stricture of ureter	4	
Renal Calculus		8	
Carcinoma		2	
Ureteral Calculus		6	6
Bladder:			
Diverticulum			34
Congenital		1	
Acquired		1	
Hemorrhagic cystitis		1	
Leukoplakia with ulcer		1	
Papilloma			
Benign		1	
Malignant operable 3 days—4 years—all		6	
Carcinoma			
Adeno (longest 2 years.—shortest 3 mos., all inoperable—average 10 mos. 3 3/4 mos.		8	
Epidermoid (longest 1 yr., shortest 1 day, all but 3 inoperable—average 3 3/4 mos.		7	
Infiltrating—2 yrs.—1 mo., only 1 operable, average 5-4/7 mos.		4	
Papillary—4 yrs.—1 wk., all operable, average 18 mos.		1	
Unclassified (in diverticulum—3 days, operable.			
Urethra & Prostate Gland:			
Diverticulum		1	34
Congenital stricture		1	
Chronic inflammation with stricture		18	
Prostatitis		2	
Enlargement of prostate		10	
Papilloma of posterior urethra		2	
Extra-urinary (vaginitis)		1	1
Undiagnosed		3	3

inflammation with stricture accounted for eighteen. There were two cases of prostatitis, ten enlargements of the prostate and two papillomata of the posterior urethra.

There was one case of extra-urinary hematuria, produced, we thought, by an acute vaginitis. There were three cases in which we did not make a diagnosis. In two of these cases sufficient work could not be done because of the patient's reluctance or refusal. In one case a complete investigation failed to reveal the cause.

THE present study was of particular interest to us because of the very large incidence of neoplasm. With two renal carcinomata and twenty-three vesical carcinomata, we have a total of 25 per cent urinary cancer in this series. If we add nine papillomata and one leukoplakia we get a 35 per cent incidence of neoplastic or pre-epitheliomatous disease. There were 32 per cent of new growths in Higgins' 798 cases of hematuria (2). A symptom so grave that at least once every three times it occurs, a neoplasm is present, should be given a more conspicuous place in our danger list. Upon further analysis of this observation we learn that a number of inoperable carcinomata came in with a history of hematuria of one day's duration. This brings us to the realization that too many of our patients are unnecessarily allowed to develop hematuria. Many of these patients appeal to us for relief from urinary frequency, vesical irritability, renal colic or simply a feeling of ill-being and we are not sufficiently alert to foresee the lesions which are developing.

I WOULD make a plea at this time for earlier recognition of cancer of the prostate. We were amazed to find that in

this series not one case of cancer of the prostate occurred, although there were several instances of cancer of the bladder with secondary involvement of the prostate. We are inclined to think that the hope for cure of cancer of the prostate is in the hands of our family physicians. It is particularly in the hands of those who attend male patients from the age of 50 and upward. There is a moral indictment for the doctor who is unwilling or unable to do a diagnostic rectal examination. Early diagnosis is only possible through early examination and since so many of these patients develop no symptoms until they are advanced and inoperable, recognition must be made by rectal examination and not by history.

We could develop a great many morals from this study if our time permitted. I conclude with the thought that in this Long Island community during the past twenty-one months, at least one out of every three patients who consulted us complaining of hematuria had a neoplasm in the urinary tract. In many the symptoms occurred too late for us to be of any service, in many more its treatment was deferred too long. The utmost importance must be given the complaint of hematuria before we can hope to improve mortality from urinary cancer and, if we are to reach the high goal, every patient with urinary symptoms should have early urological study.

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PROFESSIONAL BUILDING.

Discussion—Dr. Francis G. Riley:

May I congratulate Dr. Bowles upon the excellent presentation we have just listened to. He rightly emphasizes the fact that in a series of 100 cases he is not trying to establish any statistics. And still, even in this comparatively small series of cases he has been able to demonstrate the tremendous importance of hematuria as a symptom of urologic disease. Again he has confined his

paper largely to frank, gross hematurias. Microscopic hematurias are frequently as serious though much less dramatic, and if persistent require as thorough investigation.

I note he has included only two cases of injury as a cause of hematuria in this study. In these days when the automobile is so frequently the cause of accident we might expect a higher incidence. Both his injury cases involved the kidney. The kidney is the usual source of hemorrhage in accident cases, though the bladder may at times be involved. I

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have seen two cases of hematuria during the past year due to puncture of the bladder by bony splinters following fracture of the bony pelvis.

The strong emphasis the doctor has placed on the role of hematuria in malignancy is to be applauded. He notes an incidence of 35 per cent malignant or premalignant cases in his series. And this seems to be the heart of the whole discussion of hematuria. It is the painless and otherwise symptomless hematuria which must be investigated at all costs. According to Herman 43 per cent of all surgical lesions of the kidney are accompanied by hemorrhage; 40 per cent of all hematurias originate in the kidney or ureter, and 60 per cent in the bladder or urethra. Fifty per cent of all massive hemorrhages are due to bladder tumors.

The greatest disservice a physician can do a patient complaining of hematuria is to give him some prescription to take by mouth. Hematuria is like the rain. It always stops. If it stops after taking some medication the patient is likely to credit the prescription and to be lulled into a false feeling of security. Valuable time is lost in making a diagnosis and effecting a cure of the causative factor. If the hematuria is associated with other symptoms of urologic pathology the patient is much more likely to attend to his condition. But then again, particularly in the newgrowths of the bladder or renal pelvis, the condition has frequently advanced beyond a stage where there is any hope of cure.

Any hematuria, whether accompanied by other symptoms or not, requires all examinations neces-

sary to obtain a complete diagnosis. This cannot be too urgently stressed.

I was struck with the fact that in this series Dr. Bowles found only one benign papilloma. I feel that this may be because the majority of the cases reported came under his observation when well advanced. But a benign papilloma of the bladder is a serious matter until it is thoroughly and finally eradicated. It should be emphasized that all cases of bladder papilloma should be kept under observation at regular intervals indefinitely following the eradication of the tumor. They are liable to recur and recurrences are prone to tend toward malignancy.

The case of primary cystitis as a cause of hematuria is very interesting. The doctor has emphasized its unique status. Hemorrhagic cystitis can almost always be traced to a primary cause, as traumatism, mechanical or chemical, congestion, infection or obstruction as in obstructing prostate, urethral stricture or other urethral obstructive lesion.

Essential hematuria, meaning a hematuria in which the cause cannot be defined, used to be a common diagnosis. It has become less and less so as our methods of diagnosis have improved. In the series of cases the doctor has reported he notes three such cases but two are unfairly placed in this category because in these two he was not able, because of conditions beyond his control, to complete his examinations. This leaves only one case, which must be considered an excellent record.

I should like to thank the Program Committee for the privilege of discussing Dr. Bowles' interesting presentation of an always timely subject.



Thrombophlebitis

FOLLOWING SURGICAL PROCEDURES

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THROMBOPHLEBITIS or venous thrombosis, while of particular interest as a postoperative complication, may also be associated with or follow pregnancy, pneumonia, typhoid fever, and a number of other non-surgical conditions.

Ochsner and DeBakey in a recent issue of the *Archives of Surgery* stress the importance of differentiating between thrombophlebitis and phlebothrombosis. In the former, as the term implies, there is an as-

sociated inflammation in the wall of the vein, with fixation of the thrombus to the vessel wall decreasing the possibility of embolism, while in the latter, this inflammatory reaction does not exist and the thrombus is less firmly adherent.

Any vein in the body may be the site of thrombophlebitis but rarely does thrombosis of the veins of the upper extremity or the superficial veins of the lower extremity produce edema and pulmonary em-

bolism. The iliac and femoral veins are most frequently the site of thrombosis and the more easily recognized and treated.

THE incidence following abdominal operations has been estimated from 1 to 4 per cent in a large series of cases studied. Not infrequently thrombophlebitis follows the so-called "clean" operations and recently I have been unfortunate in having two such cases, which stimulated my interest in the subject and at the same time depressed me mentally in no small degree. These cases will be considered later.

Much work has been done on the etiology of thrombophlebitis; the two factors which have been generally accepted are, first, damage to the endothelial lining of the vessel, which may be mechanical, toxic or bacterial, and second, venous stasis, which is the more plausible explanation but cannot explain every case. The contributing factors to venous stasis in the femoral vessels have been listed as follows: 1. Compression of femoral veins between Poupart's ligament and the horizontal ramus of the pubic bone. 2. The flow against gravity from Poupart's ligament to the inferior vena cava. 3. Compression of the left common iliac vein between the right common iliac artery and the spine. 4. Pressure of the sigmoid colon on the left common iliac vein. These factors are aggravated by the Fowler's position commonly used postoperatively. Venous thrombosis is nine times more common on the left side than on the right. Sepsis, formerly considered an important factor, has little evidence to support it. Lubarsch was able to demonstrate organisms in only 20 instances in 215 cases of thrombophlebitis studied bacteriologically.

Other contributing factors in venous thrombosis are shock, trauma, pressure resulting from abdominal distention, and the limitation of motion in the extremities.

AT the onset, which is usually 5 to 14 days postoperative, the patient complains of deep soreness or pain in varying degree in the thigh or calf of the af-

fected side; tenderness is noted over the vein and increased local temperature and redness may be noted. The patient usually has a slight rise in temperature within the first twenty-four hours and a slight elevation in pulse rate is the rule.

Edema follows in 50 per cent of cases of thrombophlebitis of the veins of the lower extremity.

While pulmonary embolism is not uncommon following acute thrombophlebitis of the iliac and femoral veins, it is rarely fatal.

Treatment first and foremost is preventive: gentleness in the handling of tissues, especially in the vicinity of large venous trunks, care in placing and using retractors, and early active motion of extremities with frequent change in the patient's position have been stressed. The shock position is ideal in the prevention of venous stasis in the pelvis and lower extremities. Circulatory failure, dehydration, and hemoconcentration should be prevented. Walters recommends the administration of desiccated thyroid gland following operation in order to increase the rate of blood flow. Anticoagulants such as sodium thiosulfate intravenously have been recommended by Bancroft and others; Ochsner recommends hirudinization and the work of McLean, Howell, Best, Murray, and Swedish workers has shown both experimentally and clinically the value of heparin in the prevention of thrombosis and embolism.

THE treatment of thrombophlebitis, once the diagnosis is made, varies widely, but it is generally agreed that in the early, acute phase, elevation and rest are indicated; heat is preferable to cold since the latter produces vasoconstriction and further slows the blood stream. Heat may be applied as moist dressings or the heat tent.

The prolonged inactivity and bed rest no longer seem necessary or advisable. Barker and Counseller limit the stay in bed from 10 to 16 days from the onset, on the ground that the danger of embolism is past unless a new thrombus forms.

Leriche, Ochsner, and DeBakey in a recent report recommend blocking the regional sympathetic nerves with procaine hydrochloride, producing a vasodilation of the vessels of the extremity. Their results warrant a more extensive trial of this procedure since the period of hospitalization is shortened and the chronic lymphedema is prevented.

Ligation, excision, and embolectomy, like the routine use of sodium thiosulfate, thyroid extract, and hirudin, do not seem justifiable except in the occasional case.

IN conclusion, I would like to cite briefly six cases that have developed thrombophlebitis postoperatively. First, an adult woman, aged 53, who developed a thrombophlebitis of the left lower extremity with a definite involvement of the iliac as well as the femoral veins on the 12th day following a supravaginal hysterectomy for a fibroid. There were no pulmonary complications. Second, a white female, aged 63, developed a thrombophlebitis on

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Discussion—Dr. Harold W. Draffen:

The records at Queens General Hospital and Mary Immaculate Hospital were reviewed for the past five years. At Queens General there were over ten thousand major operations during this period and nineteen cases of postoperative thrombophlebitis were recorded as a complicating factor. This would be less than 1/5 of 1 per cent. I rather doubt this figure as too flattering even though all major operations were included. At Mary Immaculate there were six cases recorded for a period of five years. Three were fatal following pulmonary complications. It is interesting to note that two of the cases occurred after implantation of radium in the bladder. One of the fatalities was from a mesenteric thrombosis following a hernia under spinal anesthesia. I also know of three herniotomies under spinal done elsewhere that developed mesenteric thromboses.

Assuming that venostasis is a contributing cause, spinal anesthesia may be a factor since the blood pressure is lowered and the blood stream decreased

the 16th day postoperative, the diagnosis being acute suppurative appendicitis with general peritonitis. Pulmonary complications followed. Third, a young adult male, 26 years old, with onset of pain in calf of right leg on the 7th day postoperative. Operated for acute uncomplicated appendicitis. Pulmonary complications followed. Fourth, a young adult male developed symptoms of left femoral thrombophlebitis on the 13th day postoperative; operation was for left direct inguinal hernia. Pulmonary complications followed. Fifth, adult male, aged 57, with left femoral thrombophlebitis developing on the 11th day postoperative; operation was for left direct inguinal hernia. Pulmonary complications followed. Sixth, male, 50 years of age, developed thrombophlebitis on the 5th postoperative day. Pulmonary complications followed. There were no fatalities in these cases seen in the last ten years, which confirms the statement previously made that while not infrequent, the pulmonary complications rarely terminate fatally.

PROFESSIONAL BUILDING.

in volume. Dr. Warinner mentions intra-abdominal pressure as a cause of venostasis. It seems to me that if this is an absolute cause, the complication would be seen much more frequently in large fibroids, ovarian cysts and pelvic inflammatory disease, conditions producing considerable pressure on the iliac vessels.

It is my opinion that as yet we have no satisfactory explanation for this phenomenon, either from the infectious or mechanical standpoint. I recently had a case of thrombophlebitis of the left femoral vein 22 days after a cholecystectomy. This patient had been up and about for one week.

As to preventive treatment, it is important that the blood volume be maintained postoperatively, which is best accomplished by transfusions and saline infusion. I agree with Dr. Warinner as to the advisability of postoperative muscular activity.

I thank you for the privilege of discussing this paper.

MODERN HEALTH PROGRAM

—Concluded from page 56

8. Through health and safety education health consciousness could be aroused and bring about a reduction and possibly an elimination of many accidents in industries, in homes, and on the highways.
9. The choice of physicians would remain free, and the personal relationship between

patient and physician unimpaired. Far from thwarting initiative and progress, research would be fostered and encouraged.

10. It would always be possible to know the state of the nation's health, to study its progress, to concentrate on improvements whenever and wherever necessary, and to have an exact idea of the available man material in a given emergency.

323 BEACON STREET.

The Significance of

WEIGHT CHANGES DURING PREGNANCY

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A PRACTICAL clinical consideration of this problem is limited to an attempt to answer the following questions:

1. What are the normal weight changes that take place during pregnancy?
2. What may be regarded as deviation from the normal?
3. Is weight control possible?
4. How may it be accomplished?
5. Is it worth while?

The loss in weight during the vomiting of early pregnancy is obviously due to dehydration and, to limit the subject, will be omitted from consideration in this paper.

Weight changes during pregnancy should be viewed in the light of the original average condition of the patient and the state of her nutrition. Adair, of Chicago, believes that the patient who is under weight before pregnancy may continue to fail to show a normal gain during pregnancy because of a persistence of the same factors that caused her original faulty nutrition. On the other hand the pregnancy may stimulate such a patient to produce a weight gain far in excess of that produced by a woman of normal weight. Obese patients may continue to gain excessively due to a continuation of the factors that originally produced obesity or they may keep to a more stationary weight.

STANDER and Pastore, in the June issue of the *American Journal of Obstetrics and Gynecology*, in a paper on Weight Changes During Pregnancy, based on a study of 2500 normal cases, found that the average weight increase from the 6th to the 40th week of pregnancy was 24.1 per cent or about 30 pounds. They found that the heavier the patient at the onset of pregnancy the more marked was the increase in weight. They believe that weight changes per se are of slight significance unless the original weight of the patient is taken into consideration. They believe this is important to prevent heavy patients from being put on restricted diets and unnecessarily treated for toxemia because of what appears to be excessive weight gain, while abnormal weight gains are overlooked in small individuals. They found that patients averaging 88 lbs., 132 lbs. and 176 lbs. gained 20, 30 and 40 lbs. respectively.

Davis, of the Chicago Lying-In, found an average weight gain of 21 lbs. in a series of his private patients, with half showing an average gain of 15.4 lbs., one-sixth 22.2 lbs. and one-third 30 lbs.

As a matter of curiosity, I took a sample of 100 consecutive prenatal charts from my files of private patients and grouped them according to their average

weights before pregnancy and their average weight gain at term, with the following results:

Average weights	%	Average total wt. gained
Under 120 pounds	34%	23.5 pounds
120 to 150 pounds	57%	23.5 pounds
Over 150 pounds	9%	20.5 pounds
	100	23.3 Average total

Stander and Pastore found that the weight of the products of conception, which includes the weight of the baby, placenta, amniotic fluid and blood loss, was one-third of the total weight gained during pregnancy. The rest of the weight gained is by the maternal tissues and circulation, which is excess fluid and amounts to approximately 16 per cent increase over the nonpregnant weight.

WHAT, then, is a desirable gain during pregnancy. I believe it to be between 20 and 25 pounds for the average patient. In order to keep it down to this figure it is necessary to pay particular attention to the recognition and treatment of abnormal rates of gain. If a patient engages me early enough, I try to prevent her from gaining any weight during the first three months. In this I have failed in the majority of cases that had no nausea. During the middle three months I try to limit the patient's gain to two pounds a month or a half pound a week, and during the last three months to four pounds a month or one pound a week.

During the last three months I consider a gain of more than 1½ pounds a week as being due to water retention and believe that water retention is one of the earliest signs of toxemia, which is revealed by the scales in many instances long before the occurrence of visible edema and hypertension. Therefore all excessive gainers are treated as potential toxemias. Practically it is neither necessary nor desirable to put these patients on an absolutely salt-free diet. They eliminate salted fish, meats, potato chips, beer, pretzels, etc., from their diet and are allowed to use a small amount of salt on food that is cooked without salt, or are told to add no salt at the table and to use only a moderate amount in the cooking.

The 24 hour output of urine is measured

in ounces and the patient advised to limit her intake of fluids to 4-5 oz. less in 24 hours than the measured output. By this method they often fail to show a gain at their next visit and may even lose a pound or two. When trying to rid a patient of excess fluid, she is advised to take more rest in bed at night, i.e., ten to twelve hours and a nap after each meal and no eating between meals. A mild sedative such as phenobarbital gr. ½ t.i.d., p.c. and at bedtime favors this regimen. Sodium should not be permitted in the form of the bicarbonate or even sodium bromide, for it is the sodium element that favors the water retention.

The obstetrician, even in the treatment of severe toxemias, should avoid the inconsistency of giving concentrated glucose intravenously in sodium chloride solution but should use distilled water instead, for sodium chloride solution favors the retention of fluid he is trying to remove.

IF, after a week of this treatment, the weight is not under control, attention should be paid to insure the patient a low-fat diet and a lowered allowance of 20 per cent carbohydrates. Usually a reduction in the amount of sodium chloride results in a reduction of appetite and the patient is less apt to overeat. There was considerable difficulty in a few cases in discriminating between a true toxemia and a case showing slight evidence of terminal puffiness without hypertension.

One hundred charts were checked over to see if as a result I had lowered my incidence of toxemias. I found an incidence of toxemias of 10 per cent. This is high but includes all cases showing a B.P. of over 142/90 on two consecutive occasions; 60 per cent were classified as mild pre-eclamptic toxemias; 40 per cent as chronic vascular-renal disease or essential hypertension.

One of these cases started out as essential hypertension and developed evidence of albuminuria and edema at the 34th week. There were no cases of eclampsia in the group and no cases that could be classified as severe pre-eclampsia. No cases seen in consultation were included,

so that the prenatal care was essentially the same.

In conclusion:

1. Weighing patients periodically is the easiest and best method by which one may detect water retention.
2. The rate of gain is more important than the total amount gained.
3. The average weight gained by the average patient depends on the original weight.
4. Water retention should be treated long before the appearance of visible edema.

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Discussion—Dr. Mervyn V. Armstrong:

If the diet is well balanced and not restricted in amount the average woman weighing 150 lbs. gains 20 to 25 lbs. during pregnancy.

In the early months the weight may remain stationary or possibly may even fall slightly as a result of morning sickness and the metabolic adjustments which are known to take place during the first trimester. Following this period the appetite improves and a general feeling of well-being is experienced with the result that the mother progressively gains in weight until shortly before the end of gestation.

The greatest gain occurs during the 6th to 7th month when an average increment of 4-5 lbs. may be observed. In the last 2 months a weekly increase of 1 lb. is common but a loss of 1-3 lbs. not infrequently occurs during the final week of pregnancy. About 15 lbs. of the total gain during pregnancy can be accounted for as follows:

Child—7 lbs.

Placenta—1½ lbs.

Amniotic fluid—1½ lbs.

Uterus—2 lbs.

Breast, blood and retained fluid—3 lbs.

The remainder is mainly stored as fat.

It is usually thought that no specific diet is required during pregnancy. If the patient is accustomed to eat nutritious and easily digestible food, in properly balanced proportions, no change in her dietary routine should be necessary. However, many women do not eat properly and most of them take an excess of food. Because of better utilization of food and an increase in appetite, the danger of overeating is ever present. Excessive weight gains are common and in these overweight women the tendency to toxemia and difficult labor is increased.

It has been frequently stated that the size of the fetus cannot be influenced by the mother's diet. At the Long Island College Hospital we are satisfied that the birth of very large children can be prevented, in most cases, by limiting the food intake to actual requirements and increasing the amount of exercise, whenever the weight of the pregnant woman gives evidence of excessive gain. On the other hand restriction of diet to the point of depletion results in the birth of undersized and even premature infants. Likewise an insufficiency of certain essential food elements may lead to deficiency diseases in the mother and fetus. The most notable of these are the maternal and fetal anemias. Thus we see that the diet during pregnancy merits serious consideration.

In order that the food intake be ample but not over-abundant and at the same time properly balanced, the dietary habits of each patient should be studied and regulated to suit the needs of the pregnancy.

5. Removal of excess fluid results in a lowered incidence of severe pre-eclampsia and eclampsia.

6. The incidence of mild non-convulsive toxemia is not reduced by the early recognition and treatment of water retention.

7. The treatment of all patients with evidence of excess water retention as potential toxemias has given satisfactory results in a small series of cases and does the most good in the pre-eclamptic group.

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370 HEMPSTEAD AVENUE.

According to balance studies an average intake of 2,500 calories a day is required during pregnancy for a woman weighing about 150 lbs. and actively engaged in the care of her home. Smaller women require fewer calories as do women who have fewer household duties. This caloric intake may be slightly reduced below this average in the early months and allowed to increase gradually until it exceeds this figure by several hundred calories at the 8th month.

Because of diminished muscular activity near the end of gestation, the needs of the mother are then decreased in spite of the rapid growth of the fetus. For this reason the diet should again be cut down in the last weeks of gestation.

Irrespective of the amount of food prescribed, its effect should be checked at frequent intervals by observation of the patient's weight and by palpation of the fetus. At no time should the gain in weight exceed 1 lb. per week and the size of the fetus on palpation should correspond to the period of gestation.

Daily Food Requirements of the Pregnant Woman:

PROTEIN—an adequate amount of protein is necessary to maintain the serum proteins at a level sufficiently high to prevent disturbance in water balance and consequent fluid retention.

Protein—70 to 100 grams.

CARBOHYDRATES—Ample carbohydrates should be taken in the early months as they seem to lessen the nausea or vomiting present at that time. On the other hand a reduction to 150 grams seems to be a factor in the prevention of habitual abortion.

Carbohydrates 150 to 250 grams.

FAT—is a useful vehicle for essential vitamins and aids in the fat metabolism of the fetus. Fat 100 grams.

WATER—about 1 cc. of liquid is ingested for each calorie of food taken. This amounts to about 2½ liters per day. Such quantities of fluid, however, cannot be given to all patients since a disturbance in water balance may occur and lead to fluid retention. For this reason the weight and urinary output should be observed at frequent intervals in order that occult edema may be detected and relieved by catharsis and restriction of fluid intake.

CALCIUM—adequate amounts prevent osteomalacia and fetal rickets. Excess amounts may cause an increase in hardness of the fetal head and hence may lead to obstetrical difficulties and predispose to fracture of the skull. Calcium: 1 to 1½ grams.

IRON—The hemoglobin determination should be taken at frequent intervals during pregnancy and when it falls below 10 grams per 100 cc. or 70 per cent Sahli (as it frequently does) some preparation of iron should be added to the diet. Vitamin B is necessary as an adjunct to the proper assimilation of iron. Iron 18 mg.

VITAMIN A—Deficiency of Vitamin A may be a factor in stillbirth and stunted offspring and may be a predisposing factor in puerperal sepsis. Vitamin A 5,000 I.U.

VITAMIN B COMPLEX—To prevent latent beriberi and scurvy, polyneuritis, hemorrhagic disease of newborn and nutritional anemia.

Vitamin B complex 150 to 250 I.U.

VITAMIN C—Prevents latent scurvy and neonatal hemorrhage.

Vitamin C 200 I.U. or 100 mg. ascorbic acid.

VITAMIN D—Promotes the assimilation of phosphorus and calcium. Prevents rickets and dental caries. Vitamin D 340 I.U.

VITAMIN E—In form of wheat germ oil 10 drops b.i.d. seems to be of value in cases of habitual abortion.

VITAMIN K—Thyloquinone (Squibb) is of value in the prevention of neonatal bleeding (hemorrhagic disease of the newborn) by raising the blood prothrombin level of the fetus.

Summary:

Protein 70 to 100 grams

Fat 100 grams

Iron 18 mg.

Carbohydrates 150 to 250 grams

Calcium 1 to 1½ grams

Vitamin A 5,000 I.U.

Vitamin B 150 to 200 I. U.

Vitamin C 200 I.U. or 100 mg. ascorbic acid

Vitamin D 340 I.U.

Vitamin E as wheat germ oil, 10 drops b.i.d.

Vitamin K as thyloquinone (Squibb)

The caloric intake should be 2,200 daily during the first half of pregnancy, 2,500 to 2,800 daily during second half of pregnancy for a woman weighing 150 lbs. who is actively employed. Increased and decreased allowances should be made for patients over and under this figure. Alterations should be made whenever weight gains during pregnancy are abnormal.

Food Which Must be Taken Each Day:

milk 3 glasses

orange juice 1 glass

butter 5 squares

whole wheat bread 4 slices

cheese 25 grams

1 egg

During 1st Trimester patients do better on a diet rich in carbohydrates, particularly if morning sickness is troublesome. Likewise frequent small meals are helpful in this condition.

During 2nd Trimester a balanced diet with careful attention to the mineral and vitamin requirements

is essential. Weight changes observed at monthly examinations will serve as a guide to the patient's needs. Ordinarily a gain of over 3 lbs. a month is due to over-indulgence in carbohydrates and fats and then restriction is indicated.

During the last Trimester strict observance of the preceding recommendations is necessary in order that toxemia and overgrowth of the fetus may be prevented. In this connection it is well at this time to replace part of the proteins of meat, fish and eggs with those contained in vegetables. During the last two months they will do better to take meat, fish and eggs only every other day. The appearance of the signs of toxemia calls for a diet of milk or milk and vegetables without sodium chloride.

The weight of the patient should be checked at each prenatal visit. An excessive gain may be due to an increase in adipose tissue or to fluid retention.

An effort should be made to keep the gain under 4 lbs. a month. Carbohydrates should be restricted, or entirely eliminated when there is a tendency to obesity. If the gain has been very rapid and excessive, water retention should be considered. Fluid elimination is then favored by the use of saline catharsis and restriction of fluids. Recurrence of fluid retention can usually be controlled by having the patient limit her fluid intake to an amount equal to or slightly under the total measured output of the preceding 24 hours. In addition patients with water retention should be more carefully supervised in order that other evidences of toxemia may be detected at their onset. Fluid Retention is one of the commonest findings in the toxemia of late pregnancy. Accumulation of fluid in the interstitial tissues causes a rather rapid gain in weight and should be suspected whenever the gain exceeds 1 lb. per week during the latter months of pregnancy. Fluid retention may also manifest itself in the form of edema of the ankles, feet, fingers and face. Foot edema due to pressure of the uterus on vessels from the lower extremities is apt to be unilateral. In mild toxemia the edema is usually restricted to the ankles and fingers. Its increase is gradual and it subsides rapidly under appropriate treatment. In severe toxemia fluid retention is usually detected soon after the initial rise in blood pressure. It increases rapidly and may involve the labia majora and tissues of the abdominal wall. The fingers are swollen and show deep furrows beneath tight finger rings. Just before and following the onset of convulsions the face becomes puffy and distorted beyond recognition. This puffiness of the face is unlike the usual type of facial edema and resembles a generalized urticaria. This edema disappears rapidly following delivery.

EDITORIALS

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are supposed to be impressive "window dressing," not so much by reason of the names themselves, but because of the appended titles and degrees. The lay members and officers of these organizations display an amusing awe and naïveté toward these august personages, and insist in their literature upon this proof of a given outfit's respectability.

Thus we open a communication, mayhap from the Association for the Annihilation of Blue Babies, and discover near the top of the list of notables, in the column on the left of the reading text, his excellency Professor Lord Blundell Bullough-Bloodworthy, G.C.V.O., M.D., F.R.C.P., K.C.V.O., D.C.L.

Scanning the roll, we come upon Horace Behemoth Chimera, AM., Ph.D., SC.D., M.D., C.M., LL.D., Litt.D.

This sort of thing, it appears, is supposed to settle all doubt as to the motives, aims and wisdom of a particular group.

We own, ourselves, to repugnance when confronted by these mandarins of medicine. Moreover, we question their real effectualness. The presence of such perennial Dogberrys is probably accepted by most of us as a sure proof that there is something wrong with their causes. As Shakespeare has Dogberry describe himself, "though it be not written down, yet forget not that I am an ass."

Sometimes they write it down themselves.

MENTAL HYGIENE NOTES

CASE NOTES IN EXTRAMURAL PSYCHIATRY

*Case XIV: Psychoneurosis; Anxiety Attacks
in a Twenty-five-Year-Old White Married Woman*

FREDERICK L. PATRY, M.D.

Albany, New York

Complaint Problem: Referring physician seeks advice as he found it necessary to take patient to a general hospital in order to avoid anxiety attacks at home. Husband states that wife is fearful of dreams in which snakes appear. She also has feelings of guilt in connection with a statement she made, "There is no God," because she was denied having a baby. Patient complains of fatigue, and a feeling of frustration because she lost two babies through abortions. She also links up anxiety attacks with the feeling of guilt because of denial of God's existence, marriage to husband not on the basis of love, and feelings of hostility toward her father.

Present Illness

PATIENT was in her usual mental and emotional health until July 23, 1940, when suddenly at 9:15 P. M. she became overwhelmed with fear of dying, choking sensations, weakness, trembling, perspiration, and heart consciousness associated with tachycardia. The attack lasted about fifteen minutes. It occurred in her own apartment in the presence of her husband.

The antecedents of the above anxiety at-

tack are significant. The same day and evening of her first anxiety attack she had visited a woman friend. The discussion pivoted upon babies. This stirred up feelings of anxiety and guilt. She would recall that recently she had sinned against God by saying to herself and her husband, "Why can't I have a baby? Other women have babies. There is no God." Guilt feelings were also recalled with hostility feelings against her father when she first came to the United States five years ago from Greece. She discovered at that time that her father, who had come to America when she was two months old, had failed to open a number of letters. There were also guilt feelings in connection with numerous quarrels with her father who lived in the same apartment with her husband and herself. Next to the feelings of guilt engendered by her sinning against God are those concerning her husband. She admitted that she married him, a single man sixteen years her senior, for economic support. This followed upon her frustration in marrying a young physician in Greece with whom she was in love because she or her family did not possess sufficient money for a

dowry. At the time of initial examination patient stated, however, that since her first attack she had gradually grown to love her husband but not romantically. Rather did she develop a kind, tender, sympathetic, and helpmate attitude toward him. Moreover, she stated she had forgotten the Greek physician.

A further contributory factor lies in her lowered physical stamina by virtue of four operations, including two abortions. A short time before marriage she underwent appendectomy. Shortly after marriage tonsils and adenoids were removed. The following year operation was carried out for an extra-uterine gestation of the left tube. A year later there was a spontaneous abortion at three months following a heavy day's washing. There is still some doubt in her mind as to whether she will ever have a child of her own since a tubal insufflation examination has not as yet been confirmed for patency.

There seems to be a deficit in emotional satisfactions of married life as she states she wants to live and dance and be happy with young people. She would like to obtain a position, preferably in designing, which was her premarital vocation, especially where she could meet people. There is also some blocking of emotional satisfactions in connection with her mother and sister who remained in Greece, since she is at present unable to afford their passage to America.

There is no disturbance in sleep. Whereas patient complains that appetite is less, nevertheless, her weight keeps up at normal level.

Bowels are regular. No suicidal thoughts admitted. Menstruation normal since abortion in November, 1937 with the exception of dysmenorrhea. Sex relations said to be mutually satisfactory. Husband cooperated in a sperm test which indicated normal functioning.

Personal History

BORN in Greece the younger of two sisters. Birth and early life normal. No indulgence in alcohol or smoking. Enjoys dancing, fishing, and walking. Devout Greek Catholic. Well educated.

Soon after arrival in United States patient met her husband one day, resulting in proposal the next. After three days of consideration, both decided to marry and did so shortly. Husband possesses a well-balanced adult personality; the proprietor of a restaurant. Patient's father is employed by her husband. The latter is considerate, loves his wife, and is anxious to do all he can to get her well.

No previous attacks of mental illness. No history of severe illnesses or operations other than those mentioned.

Family History

ESENTIALLY negative. Father corresponds with his wife in Greece and has visited her twice since coming to this country. Mother lives with her daughter, aged 28, single, in a small village. Daughter is unable to marry because she works to support her mother. No history of nervous and mental diseases on paternal or maternal sides.

Physical and Neurological Examinations

ESENTIALLY negative. Patient is a well-developed, well-nourished female of fair complexion and unusually good looks. Pyknic habitus. Unusually warm in sex feelings.

Mental Examination

COOPERATIVE, anxious to tell her story. Strong transference immediately established. Somewhat coquettish. Stream of thought connected and relevant. Occasional tearfulness. Subjectively admitted being anxious but no significant depth of depression admitted. States she is very fearful of snakes of which she dreams much. Anxiety trend of thought tending to guilt feelings in connection with husband, God, and father. Sensorium clear.

Diagnostic Formulation

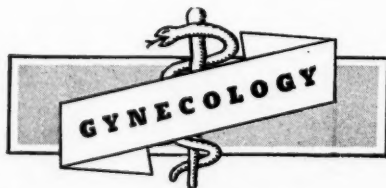
PSYCHONEUROSIS, anxiety type, due to accumulated feelings of guilt which have given rise to anxiety attacks. These latter signify fear of punishment and harm because of the guilt feelings and also emotional frustration.

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CONTEMPORARY PROGRESS

Postpubertal Menorrhagia and Its Possible Relation to Thrombocytopenic Purpura Hemorrhagica

H. L. GOLDBURGH and B. A. GOULEY (*American Journal of Medical Sciences*, 200:499, Oct. 1940) note that in this country it is seldom realized that severe menorrhagia may be the only symptom of thrombocytopenic purpura, although reports from some European clinics indicate that this "is not altogether rare." They report a case in a girl fourteen years of age who developed severe menorrhagia after menstruation had been normally established. There was no history indicative of purpura, except for the appearance of a few spots in the skin "possibly purpuric" some months previously. The blood count did not show evidence of thrombocytopenic purpura on the first examination, but one month later when menorrhagia recurred, the platelets had "practically disappeared" from the circulating blood and the bleeding time was markedly prolonged. Repeated transfusions were necessary to control the bleeding and splenectomy was finally done. The spleen showed the typical changes of thrombocytopenic purpura. In another case with a milder degree of menorrhagia, the platelet count was 110,000; the bleeding



was controlled by blood transfusions; a younger sister of this patient shows "a complete picture" of thrombocytopenic purpura. In

the third case the patient was a woman fifty-one years of age, who had menorrhagia from the time of puberty until menstruation "suddenly ceased" at the age of thirty-eight. In recent years she developed "the complete clinical picture of essential thrombocytopenic purpura." It should be recognized that menorrhagia in girls at puberty may be the first indication of idiopathic thrombocytopenic purpura; but the deficiency in platelets, increased bleeding time and other clinical symptoms of purpura may not become evident until "after a variable length of time."

COMMENT

In enumerating the causes of abnormal uterine bleeding to senior medical students, your commentator has for years given purpura hemorrhagica as a constitutional cause but he has seen only two cases of menorrhagia due to this pathological entity. It must be rare. Nevertheless, it is always to be considered when other more common and better known factors can be ruled out. Do or have done a complete blood count, including platelet count, and make a study of "spreads" for abnormal red cells on your next "tough uterine bleeding case." You may reap the re-

ward of a correct diagnosis—always stimulating.

H.B.M.

Nausea and Vomiting of Pregnancy Due to Allergic Reaction

J. W. FINCH (*American Journal of Obstetrics*, 40:1029, Dec. 1940) maintains the theory that the nausea and vomiting of pregnancy are due to "an allergic reaction of the patient to the secretion of her own corpus luteum of pregnancy." In 98 pregnancy patients with nausea and vomiting of varying degrees of severity, he found that an intradermal injection of progestin (the natural corpus luteum hormone) induced a cutaneous reaction "directly proportional to the degree of severity of the symptoms." In pregnant patients who were free from nausea and vomiting, no cutaneous reaction was obtained to a similar intradermal injection. Reactions were also negative in young girls before puberty. Fifty-one patients were treated with progestin in oil injected intramuscularly in graduated doses, according to the usual method of allergic desensitization; 91.2 per cent. of these patients were relieved of their symptoms. In all these cases the nausea persisted all day or continuously, and vomiting occurred more or less frequently. In a control series of patients, intradermal tests were made with progesterone (the synthetically produced pure corpus luteum hormone); in no case was a positive reaction obtained; treatment with progesterone in oil was also without

result. This indicates that the substance acting as allergen in the nausea and vomiting of pregnancy is not progesterone, but "an unidentified hormone of the corpus luteum." The author notes that "a high percentage" of patients with vomiting and nausea of pregnancy had other allergic diseases or gave a family history of allergy.

COMMENT

Allergic reactions have been blamed for almost all ailments the etiology of which is obscure or unknown. Now we have it as a cause of the nausea and vomiting of pregnancy. We have had no experience in "testing out" these cases but the author has certainly given us an idea. We intend to go into a "huddle" with an allergist colleague and try this idea out, since it seems to work better than any remedy hitherto suggested for the nausea and vomiting of pregnancy. H. B. M.

Hormonal Studies in Artificial Menopause Produced by Roentgen Rays

I. T. NATHAN-
SON, C. RICE and
J. V. MEIGS
(*American Journal
of Obstetrics and
Gynecology*, 40:
936, Dec. 1940)

report a study of the excretion of estrogens and follicle-stimulating hormone in the urine of 10 patients who had been subjected to Roentgen-ray irradiation of the ovaries. Similar studies were made in a surgical castrate and in one patient sterilized by radium. In most of these cases hormone assays of the urine were made for a short period preceding irradiation of the ovaries and subsequently at regular intervals during periods of one and a half to three years. At each visit, the patients were examined and carefully questioned

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as to the occurrence of menopausal symptoms—cessation of menstruation, hot flushes, night sweats, dizziness and increased nervous tension. It was found that following irradiation of the ovaries, there was a gradual diminution of the urinary estrogens, with some fluctuations, to a level considerably below normal. As the estrogen excretion diminished, the excretion of follicle-stimulating hormone increased to levels of 80 M.U. and more in the twenty-four hour specimen. Usually this titer was reached only when the estrogen levels were very low, but occasionally it was found when the estrogen level was relatively high but below normal. Menopausal symptoms began within one to seven weeks after the follicle-stimulating hormone excretion reached the higher levels, usually within two to three weeks; these symptoms did not develop when the estrogen level was low unless the follicle-stimulating hormone had also reached the higher levels. This "chain of events" occurred more rapidly in the patient who was surgically castrated and less rapidly in the patient castrated by radium irradiation. In 3 cases permanent amenorrhea was not induced by the first series of Roentgen irradiations; in these cases it was possible to predict the return of the menses "with a certain degree of accuracy" from the changes in the hormonal titers. "Random observations" were also made in 10 other patients who had been castrated one to three years prior to these studies, and in a few women who were in or had passed the normal menopause. In this group of castrated patients, the hormonal assays were similar to those described. Women in and past the normal menopause usually showed urinary estrogens well below the normal level. An excess of follicle-stimulating hormone was not found in every case, and such patients showed no vasomotor symptoms; the estrogen excretion in these patients was also somewhat higher than that usual in the menopause. It is also noted that estrogens were found in the urine of every patient studied, even the surgical castrate, indicating that there probably is "an extragonadal source of estrogen."

COMMENT

Irradiation by either Roentgen rays or by radium produces the same end-results so far as the tissue exposed is concerned. The artificial menopause produced by irradiation is no exception. Furthermore, the irradiation menopause has long been known clinically to be less "stormy" than the surgical. Now, thanks to endocrine research, hormone content in the urine can be ascertained and thereby comparisons made between the natural, the irradiated and the surgical menopause. In conformity with clinical observation of long standing the authors found that the irradiation menopause, on the average, was not so severe as the surgical. In other words, although the follicular apparatus in the ovary was destroyed by irradiation (castration), similarly to surgical ablation of the ovaries, after irradiation the changes in the hormonal titers were less rapid and complete. Your commentator, from years of experience, can agree in general with the foregoing, but must warn that personality plays a great role during the menopause. Never forget—the "hell-raiser" during menstrual life is likely to raise much more "hell" during the menopause. Also there are those who are not affected one iota by the menopause.

H.B.M.

Carcinoma of the Cervix after Supravaginal Hysterectomy

C. A. BEHNEY (*American Journal of Obstetrics and Gynecology*, 40:780, Nov. 1940) presents a review of two series of cases of carcinoma of the cervix after supravaginal hysterectomy from the University of Pennsylvania Hospital and the Philadelphia General Hospital. At the University Hospital, there were 43 cases in which cancer of the cervix was recognized "some time after" supravaginal hysterectomy in a series of 940 cases of cervical carcinoma, an incidence of 4.7 per cent. At the Philadelphia General Hospital there were 24 cases in which cancer occurred in the cervical stump in a series of 1,117 cases of carcinoma of the cervix, an incidence of 2.5 per cent. In these 67 cases of cancer of the cervical stump, the age distribution of the patients was very much the same as in cancer of the cervix in general; 45 per cent were in the fifth decade, and 74 per cent in the fifth and sixth decades. The most frequent initial symptom was bleeding. The most frequent indication for supravaginal hysterectomy in

these cases was uterine fibromyoma; in 2 cases the hysterectomy was done for carcinoma of the fundus; these 2 patients later developed epidermoid carcinoma of the cervix. Squamous cell carcinoma was found more frequently than any other histological type in this series, occurring in 78.5 per cent of the cases in which histological examination was made. In comparing the results of treatment with radium in these cases with those obtained in cases of carcinoma of the cervix with the fundus present, it was found that with the same technique of treatment, the percentage of five year cures was higher in cancer of the cervical stump than in the other cases. If only the cases discovered three years or more after supravaginal hysterectomy are considered, the percentage of cure was 41.4 per cent; in cases treated within six months after the first symptom was noted, the "salvage" was 40 per cent. The incidence of vesicovaginal fistula was higher in these cases of cancer of the cervical stump than in those cases in which the uterine fundus was present; this complication occurred in 2 patients who received no radium treatment; it cannot, therefore, be attributed to radium treatment alone but in many instances must be due to the invasion of the vesicovaginal septum by the cancer. The results in the treatment of cancer of the cervical stump in this series as well as in other clinics indicate that such cancers are at least as amenable to treatment as other cervical cancers. Before a supravaginal hysterectomy is to be done "meticulous examination" of the cervix should be done, with histologic examination of suspicious areas.

COMMENT

Prevention is the order of the day. Therefore the question of whether to perform supra-cervical or panhysterectomy is constantly before the surgeon. Debate is constant and continuous "year in and year out." In the end each surgeon and/or clinic adopts a routine of one or the other method, often a combination, depending on the pathology present, and "hammers away." Follow-up is negligible, mediocre or excellent, usually negligible, and hence, over the years, nothing is known about the cervix, except by those careful, conscientious souls who "follow through on all they do." The author has done just that and

therefore we have definite and dependable figures for the occurrence of cancer in the retained stump of the cervix following hysterectomy. Our routine for years has been either to remove the cervix with the uterus or destroy the endocervix by "coring it out" with the cautery immediately prior to hysterectomy. Using these technics in "several" hundred cases we have not seen a single case of cancer of the retained cervical stump. We have seen a few cases of "stump cancers" upon whom other surgeons had performed hysterectomy. Our experience coincides with that of the author, viz., that cervical "stump" cancers are as amenable to treatment as other cervical cancers. Better remove the entire cervix or destroy the endocervix and thus prevent "stump" cancer.

H.B.M.

Cause of Menstruation and Uterine Bleeding; A New Theory

K. J. KARNAKY (*Southern Medical Journal*, 33:1285, Dec. 1940) notes that the researches of Markee, Bartelmez and others have shown that "the constant and essential events leading to menstruation" are dehydration of the endometrium and "extreme vasoconstriction" of the spiral arteries of the endometrium for four to twenty-four hours before the onset of bleeding. When the spiral arteries relax and the endometrial circulation becomes normal, some of the capillaries of the endometrium that have been weakened by the ischemia rupture and cause local hemorrhages; "the confluence" of these small hemorrhages constitutes the menstrual bleeding. The author's theory is that the constriction of the spiral arteries and the endometrial dehydration with subsequent bleeding depend upon the level of the estrogen in the blood. With estrogen below or above this level, these changes do not occur, and there is consequently no bleeding from the endometrium. To test this theory he gave the synthetic estrogen, stilbestrol, to 30 women who had passed the menopause two to twenty-eight years previously. When 1 mgm. stilbestrol was given by mouth daily (equivalent to 25,000 international units of estrone daily), all these patients began to bleed when about 40 mgm. had been given; bleeding continued after that if 1 mgm. was given every other day. If the administration of stilbestrol was stopped, or if large doses

of stilbestrol were given (10, 15 or 25 mgm.), the bleeding stopped "almost immediately." In hypomenorrhea or amenorrhea, bleeding could be induced by the same procedure; in these cases smaller total doses of stilbestrol were required (not over 25 mgm.) to bring the blood estrogen to the bleeding level, because these women had some estrogenic hormone in their blood. In patients with uterine bleeding associated with uterine myomas, and in functional uterine bleeding, the bleeding was promptly stopped by giving 15 to 25

to 100 mgm. stilbestrol or 50,000 rat units of placental sex hormone intramuscularly. The bleeding can then be controlled as long as doses of 5 to 10 to 25 mgm. of stilbestrol are given daily. In the myomatous cases this method was used so that patients could be "built up" for operation. These results indicate that the bleeding in cases of uterine myoma is hormonal in origin and not due to mechanical causes. For uterine bleeding due to mechanical causes—as in retained placenta—is not controlled by hormone treatment.

COMMENT

The mechanism of the appearance of the menstrual flow has long been more or less uncertain. The author's explanation seems logical, although, so far as I can see, he has not given proof of the actual mechanism per se but only the cause of the mechanism. Any mechanism whatsoever that produces menstruation is dependent upon the estrogen level in the blood. This is a well known and accepted fact. On the other hand, the exact modus operandi of how the blood escapes from the blood vessels of the "menstruating" endometrium is not so exactly known. The author, however, assumes that "the constant and essential events leading to menstruation" are dehydration of the endometrium and "extreme vasoconstriction of the spiral arteries of the

endometrium for four to twenty-four hours before the onset of bleeding," and by varying the dosage of the synthetic estrogen, stilbestrol, he controls or promotes uterine bleeding almost at will. This is particularly useful in the bleeding caused by uterine myomata—where such bleeding is endocrinal and not mechanical in origin. Certainly we must admit, in the light of present day knowledge, that not all bleeding in fibroids is due to a mechanical cause. Formerly we always considered "fibroid bleeding" as mechanical.

Remember and read this article before you advise hysterectomy for all cases of fibroids, particularly in younger women.

H.B.M.



Vitamin K in Obstetrics

L. M. HILLMAN, L. B. SHETTLES and N. J. EASTMAN (*American Journal of Obstetrics and Gynecology*, 40:844, Nov. 1940) note that it has long been recognized that newborn infants show a special tendency to bleed. With the recent test for plasma prothrombin it has been shown that this bleeding tendency is associated with a low prothrombin level. Experimental and clinical work with vitamin

K, since its discovery in 1935, has shown that the plasma prothrombin can be increased by the administration of this vitamin. At Johns Hopkins Hospital it has been found that the plasma prothrombin level of the newborn infant's blood can be raised both by giving vitamin K to the mother before delivery (even as late as four hours before), and by feeding vitamin K to the infant after birth. The prothrombin is raised to a higher level by antepartum administration to the mother. In order to determine whether neonatal mortality could be diminished by this method, every other patient in labor admitted to Johns Hopkins Hospital was given the synthetic vitamin K, 2-methyl-1, 4 naphthoquinone, 2 mg. by mouth. There were 384 mothers given vitamin K up to May 1, 1940, with a control series of 392.

The two series were similar "in every respect" as to the distribution of patients according to race, parity, contracted pelvis, operative procedure, and premature babies. There was no evidence of any ill effect of vitamin K; the puerperal morbidity was the same in both groups; there were 2 cases of thrombophlebitis in the control group and one in the vitamin K group. There were 2 maternal deaths in the vitamin K group, both due to definite obstetrical causes. The infant death rate (stillbirths and neonatal deaths) in the vitamin K group was 1.5 per cent. (6 deaths) and in the control group 4.1 per cent. (16 deaths). Statistical analysis indicates that this difference in death rates is significant. The value of vitamin K in preventing bleeding in the newborn is also shown by the autopsy findings. In the 6 fatal cases in the vitamin K group, hemorrhage (subarachnoid) was demonstrated only once, and in this case was due to severe trauma in a difficult breech extraction. In the 16 fatal cases in the control group, hemorrhage "into one or another organ" was demonstrated in 9 instances, or 56 per cent. In one of these cases there was evidence of typical hemorrhagic disease of the newborn; plasma studies on this infant before death had shown the prothrombin concentration "too low to be read." The retinas of some of the infants in each group were also examined; of 92 infants in the control group, 29, or 32 per cent, showed retinal hemorrhages; of 75 infants in the vitamin K group, 12, or 16 per cent, showed retinal hemorrhages. This difference, also, was sufficiently marked to be of statistical significance. The low plasma prothrombin characteristically found in newborn infants is not "a disease entity unto itself." Unless the prothrombin level is extremely low, there may be no clinical symptoms; but if birth trauma, anoxia or other conditions that cause bleeding are superimposed, the prothrombinemia is an important factor in prolonging bleeding and increasing the extent of the hemorrhage. The routine antenatal administration of vitamin K, with suitable dosage and "properly timed," the authors believe will "well-nigh eliminate

hemorrhagic disease of the newborn"; in addition, certain types of cerebral hemorrhage, especially small hemorrhages that "ooze" for several days, "may be preventable by this measure." To what extent neonatal mortality can be diminished by this measure, it is "obviously impossible to state, but the evidence presented would seem of sufficient promise to warrant recommending the routine antenatal administration of vitamin K for trial."

COMMENT

It has been proven without doubt that the antenatal administration of vitamin K reduces the incidence of bleeding in the newborn. This being a fact it behooves all practitioners, specialists included, to include vitamin K in the regimen of their pregnant patients, particularly those who have a history of "bleeding" or who are likely to have dystocia or prolonged labor. It is not too expensive for the average obstetric case and therefore it can be given without placing an undue burden on the family budget. We have found considerable consolation in the few cases in which it has been given in our clinic and private practice.

Try it!—it can do no harm and may save a baby.

H.B.M.

The Hazards of Pregnancy and Labor in the "Grande Multipara"

N. J. EASTMAN (*New York State Journal of Medicine*, 40:1708, Dec. 1, 1940) adopts the French term "grande multipara" to designate a woman who has had five or more children. In an analysis of 45,514 consecutive obstetric cases at the Johns Hopkins Hospital, in which the pregnancy "went to or beyond, the stage of viability," he finds that the maternal death rate increased abruptly for the eighth pregnancy, and was still higher for the ninth and subsequent pregnancies. For the first to the fifth pregnancy, the maternal death rate varied from 3.55 to 3.78 per 1000; for the eighth pregnancy, it was 6.08 per 1000, and for the ninth and later pregnancies 11.73 per 1000. The causes of maternal death were also different in the later pregnancies. In primiparae, the chief causes of maternal death were puerperal infection, eclampsia and hemorrhage; there was but one fatal case

of placenta previa in 17,497 primiparae, and no fatal case of rupture of the uterus. In the ninth pregnancy, the chief causes of maternal death were rupture of the uterus, chronic hypertensive vascular disease or chronic nephritis, and placenta previa. For the parity group VI to VIII, also the same conditions were the chief causes of maternal death. Hypertensive vascular disease or nephritis is the chief complication of pregnancy in the grande multipara, and would probably have been recorded as the most frequent cause of postpartum maternal death, if it had not been the practice at the Hospital to interrupt pregnancy in patients "with clear-cut examples of this disorder." On the basis of these findings, the author advises that every woman should either be instructed in contraception, or sterilized if she requests it, after the birth of the eighth child. Sterilization he considers is justified in such cases on the basis of "grande multiparity" alone. Women who have had fewer children but have definite hypertensive vascular disease or chronic nephritis should also be instructed in contraception; if pregnancy does occur it should be interrupted during the first half of pregnancy and the woman sterilized. It is most important for obstetricians to realize that the grande multipara is not an "easy obstetrical case," as has been supposed, but one that calls for "the utmost in alertness and judgment."



COMMENT

There can be no greater tragedy in any family than the death of the mother. This is particularly true where there is a large family of children—6 to 15. Therefore study of the hazards of childbirth in the grande multipara is timely. We can heartily agree with the author when he states that "it is most im-

portant for obstetricians (and all those doing obstetrics, too) to realize that the grande multipara is not an 'easy obstetrical case', as has been supposed, but one that calls for the utmost in alertness and judgment." Take more interest in your grande multiples—it will well repay you.

H.B.M.

The Prognosis for the Fetus in the Toxemias of Late Pregnancy

F. J. BROWNE and G. H. DODDS (*Journal of Obstetrics and Gynaecology British Empire*, 47:549, Oct. 1940) present a study of the number of living infants delivered in 589 pregnancies in which the mother had shown some form of toxemia in the later months of pregnancy. In the group with pre-eclampsic toxemia there were 144 infants; 125, or 87 per cent, were born alive and discharged alive from the hospital. Of these 125 infants, 95 were born at term and represent an infant survival of 94 per cent of the deliveries at term. In the group in which eclampsia developed, there were 48 infants, and of these 25, or 52 per cent, were born living, and survived; 17 were born dead or macerated. In the group of hypertension complicating pregnancy in which hypertension developed before pregnancy or in the early weeks, there were 86 infants, and 54, or 62 per cent, survived. Of these 86 pregnancies only 41 went to term, and of the infants born at term, 38, or 92 per cent, survived. The authors are of the opinion that more of the pregnancies in this group could safely have been carried to term with modern methods of treatment, and that in this way the "infant salvage-rate" in essential hypertension could be increased to at least 75 per cent. There were only 19 pregnancies in 17 patients with chronic glomerulonephritis; 12 infants, or 63 per cent, survived; only 3 of these surviving infants were delivered spontaneously; 4 were delivered by Cesarean section and 5 "by some form of induction." There were 193 pregnancies in which the mother showed a recurrent toxemia; most of these have been included in the other groups, but some could not be so classified. In this group there were 154 surviving infants, or 80 per cent.

MEDICAL TIMES, FEBRUARY, 1941



Treatment of Sinusitis by the Displacement Method

L. K. GUNDRUM (*Laryngoscope*, 50: 989, Oct. 1940) points out that before treatment of sinusitis is attempted, it is important to establish the correct diagnosis. An allergic condition "that manifests itself only in the nose" is often quite difficult to differentiate from true sinusitis. To further complicate the diagnosis an allergic patient may develop sinusitis, or as most allergists now believe, a patient with sinus infection may become sensitized to the proteins of his own bacteria. In a typical allergic case the nasal mucous membranes are pale and edematous, the smear from nasal secretions or washings of the sinuses shows a preponderance of eosinophiles; in sinusitis, the nasal mucous membrane shows inflammation, the smear, pus cells and bacteria. Roentgenological examination is of value in differential diagnosis; if repeated examinations show marked variations in the cloudiness of the sinuses, this is suggestive of allergy. If the sinuses are filled with an opaque substance by the displacement method before roentgenograms are made, the method of filling of the sinuses differs in the two conditions. Failure to fill is more common in allergy than in sinusitis; if filling takes place, the shadow in allergy is not so dense as in sinusitis, does not follow the bony outline so closely and is "ballooned rather than pebbled." Roentgenological examination with an opaque substance is also indicated before attempting displacement therapy to establish the patency of the ostia. The author has used Proetz's method of displacement therapy in the treatment of sinusitis since 1929. At first he used the solution employed by Proetz (0.5 per cent ephedrine in normal saline); treatments were given twice weekly. Of the 200 cases

treated by this method, 58 per cent were definitely improved. Later bacterial antigens (stock antigens) were used for instillation; this method was first tried in 20 cases that failed to respond to the ephedrine treatment; of these 14 (70 per cent) showed definite improvement with the antigen instillations. In employing bacterial antigens for displacement therapy, a dilute solution is first used, 0.25 c.c. of antigen in 6 or 8 c.c. of either 0.5 per cent ephedrine or 0.125 per cent neosynephrin in normal saline; lately isophrin has been used as a diluent and appears to cause less irritation. The amount of antigen is gradually increased, avoiding "unpleasant reactions." Treatments are usually given twice a week, but once a week is sufficient if the reaction to any treatment persists more than two or three days or the course of treatment is prolonged. A total of 520 cases have been treated by this method of displacement therapy with definite improvement in 354, or 71 per cent. Before instituting displacement therapy, the nose "must be placed in as nearly a perfect anatomical condition as possible," by the correction of nasal deformities, such as deviated septum, hypertrophied turbinates, etc. A follow-up study was made of 100 patients, "originally classified as improved," selected at random two to six years after the completion of treatment by the displacement method. Of these 68 have had no recurrence of symptoms; in one case symptoms returned in a few months after the patient was discharged as improved. Recurrences or reinfections have occurred in 31 patients, always following an attack of acute rhinitis; in 7 the symptoms were mild and subsided without further treatment; 24 returned for treatment, and in all but one of these the recurrent attack was relatively mild and yielded promptly to treatment. Thus of these 100 cases who were improved by the treatment, all but 2 (or 98 per cent) have had "permanent favorable results." The displacement method has not been used in cases of acute sinusitis, and no complications have been observed other than a few ephedrine reactions.

COMMENT

A well recognized method of treatment of chronic sinus infection in certain types of cases. We agree that nasal allergy is an extremely frequent "nigger in the woodpile". The author's statement "Before treatment is instituted, the nose must be placed in as nearly perfect anatomical condition as possible. It is necessary to eliminate the predisposing causes of the infection . . ." would seem to be highly significant. It is our opinion that if these requirements can be satisfied and allergy eliminated the great majority of patients will not need any more treatment. The use of bacterial antigens would seem to be an improvement upon, or rather a valuable addition to, the other solutions commonly in use.

L.C.McH.

Intranasal Vaccine Spray in Prophylaxis Against the Common Cold

T. E. WALSH (*Annals of Otolaryngology and Rhinology*, 49:875, Dec. 1940) is of the opinion that the development of a cold depends primarily upon "the breakdown of the normal defenses of the nose," which may be due to a variety of factors. Whether the cold develops or not "depends on the presence of pathogenic organisms and the resistance of the individual to them." The subcutaneous injection of vaccine for the prophylaxis of common colds has "proved disappointing." Experimental findings indicate that local application of vaccine to the nasal mucosa is "a more rational method" of vaccination against so local a disease as the common cold. Vaccines have been prepared from cultures of organisms obtained from patients with acute and chronic infections of the upper respiratory tract; these showed a variety of organisms; fresh cultures were added to the stock from time to time. The concentrated vaccine mixture was diluted with physiological saline so that 1 c.c. of the final suspension contained 1 billion staphylococci. The vaccine was applied with a nasal atomizer by the patient; a De Vilbiss No. 28 atomizer has been found to be most suitable. Patients were instructed to snuff up "six puffs of the vaccine into each nostril every night just before retiring." This was to be done every night for three weeks; then after a week's rest for two weeks; thereafter for alternate two weeks' periods through the rest of the

"cold year" (September to May). All patients who were given the vaccine were susceptible to colds and had had three or more severe colds yearly in previous years. If with the use of the vaccine, they had no colds or not more than two mild attacks of rhinitis not lasting over forty-eight hours, the result was recorded as "good." More than two attacks of rhinitis of short duration and not more than three attacks, or one or two "mild colds," was recorded as a "fair" result. More than two mild colds or even one severe cold, "in spite of the patient's protestations of improvement," constituted a "bad" result. Since the winter of 1932-33, 384 patients have used the vaccine with good results in 255 cases and fair results in 45 cases. As some of these patients have used the vaccine for more than one year, the results obtained on the basis of 627 "patient-years of vaccination" were 74 per cent good results, 10 per cent fair results and 16 per cent failures. The results indicate that local vaccination against the common cold is "the best means of prophylaxis at our disposal."

COMMENT

This sounds very promising and if further reports show consistently good results another step forward will have been made in the fight against the common cold.

L.C.McH.

Early Symptoms and Treatment of Nasopharyngeal Tumors

L. DAVIS and J. MARTIN (*Annals of Surgery*, 112:1058, Dec. 1940) note that diagnosis of nasopharyngeal tumors is often not made until intracranial extension brings the patient to the neurological surgeon. In a review of 15 such cases, the authors find that although intracranial metastases sometimes developed rapidly, there were always "unmistakable signs of the primary tumor" prior to such metastases, which should have indicated the need for a careful examination of the nasopharynx if not suggesting the actual diagnosis. The most frequent symptoms observed while the tumor was still a local growth in the nasopharynx or ear were: A

"stiffness" or feeling of fullness in the nose with a thin, watery or sometimes mucopurulent nasal discharge; or a fullness in the ear, perhaps with tinnitus, relieved only temporarily by insufflation, earache or deafness, sometimes a persistent discharge from the ear; or a feeling of thickness in the region of the soft palate, difficulty in swallowing and change in voice tone. There was usually either localized headache or pain in the trigeminal area. In the 15 cases studied the primary tumor was in the nasopharynx in 7 cases, in the ear in 2 cases; in the nose in 3 cases; in the sinuses in 3 cases. All had some of the symptoms mentioned indicating the presence of the tumor; in several cases no otolaryngologic examination had been made before there were "far advanced signs of intracranial involvement." The authors urge that any patient with "a train of symptoms" such as noted should have a thorough examination of the ears, sinuses, nasal passages and nasopharynx. Any "mass" found should be biopsied, and the biopsy "should not be too superficial." If the tumor is found to be malignant, the authors believe that radium or deep roentgenotherapy offers the greatest hope for "control" of the tumor, as they consider it "doubtful if surgery ever accomplishes very much in the treatment of nasopharyngeal malignancy."



COMMENT

The plea for early diagnosis of tumors cannot be too often reiterated. We agree with the authors and would like to add that the routine use of the nasopharyngoscope in rhinological examinations will enable one to see lesions that may otherwise be easily overlooked.

L.C.McH.

Irrigation of the Sphenoid Sinus

G. E. TREMBLE of Montreal, Canada (*Archives of Otolaryngology*, 32:952, Nov. 1940) describes a cannula used for aspirating secretions from and irrigating the sphenoid sinus, designed to puncture the thin anterior wall of the sinus. The author is of the opinion that this method of entering the sphenoid sinus has definite advantages over introducing an instrument through the natural ostium. Material withdrawn in this way is less likely to be contaminated, and irrigating fluid can be more easily syringed through if there is a free exit through the natural ostium. The instrument described consists of a cannula graduated in centimeters and slightly curved downward at the end; the curve is such that the cannula will penetrate the anterior wall of the sinus "at the safest spot"—10 to 20 mm. below the level of the roof of the sinus. This downward curve also "insures entry into the lower half, or deeper part, of the sinus." There is a vertical guard at the lower border of the cannula, 11 mm. from the tip, that prevents the instrument from penetrating too deeply into the sinus. The proximal end for attaching the syringe is turned downward so as not to interfere with the view along the barrel of the cannula. If the middle turbinate and middle meatus are visible after cocaineization it is usually "a simple procedure to reach the sphenoid sinus" with this instrument. Preliminary roentgenograms are useful, especially the lateral view to determine the level of the cribriform plate. The author also describes a spectacle frame for indicating the level of the cribriform plate.

COMMENT

A very useful addition to the rhinologist's armamentarium. It should be remembered that there is no foolproof cannula for puncturing and irrigating any sinus. The variations of intranasal anatomy are greater than those of the external nose, hence the problem of puncturing any certain sphenoid sinus will be highly individualized. It should also be noted that those which need irrigation are apt to be those which are most difficult to approach.

L.C.McH.



Acute Suppurative Otitis Media . . . 1514 Cases

J. H. MAXWELL and D. H. BROWN-ELL (*Annals of Otolaryngology and Rhinology and Laryngology*, 49:973, Dec. 1940) report a study of 1514 cases of acute suppurative otitis media that were under observation throughout the course of the disease; in 896 cases, mastoidectomy was required. In the majority of patients in this series, early drainage of the tympanum was not established, i.e., drainage within three days of the onset of severe earache. Spontaneous perforation occurred in 828 cases, but was more apt to occur after three days than early. In this series there was no tendency for perforation to occur earlier in children than in adults. Spontaneous perforation of the tympanum does not necessarily establish satisfactory drainage but fewer secondary myringotomies were necessary in those cases in which perforation occurred early than in those in which it occurred late. In the majority of cases in which acute mastoiditis requiring mastoidectomy occurred, drainage of the acute suppurative otitis was established late (more than three days after onset), whether by spontaneous perforation or late myringotomy. The time and type of surgical drainage was found to have a definite effect on both the course of the otitis and the incidence of complications. In the non-septic cases of mastoiditis that came to operation, there was a sharp rise in the mortality rate after the age of sixty years; and in the septic cases, the mortality rate was more than doubled after the age of twenty. The findings in this series of cases emphasize the importance of early and adequate surgical drainage of the tympanum in acute suppurative otitis media, if "the deleterious effects of pressure retention of pus within the middle ear" are to be avoided. The "pressure factor" is not necessarily the only one of

importance in the production of mastoiditis, but, the authors believe, "its role is one of major significance."

COMMENT

Confirmatory evidence of the widespread opinion among otologists that when there is evidence of pressure in the tympanum in acute otitis myringotomy is indicated. We agree that the "pressure factor" is of definite importance.

L.C.McH.

Round Window Grafts for Deafness

W. HUGHSON (*Archives of Otolaryngology*, 32:611, Oct. 1940) reports results of operation for deafness by blocking the round window niche with a tissue graft. The technique of the operation has been previously described and two previous reports on results in a small series of cases have been published—the last in May 1938. In this article the author reports the results of operation on 36 ears in 30 patients who have been under observation for from six months to three years and nine months. There were 21 women and 9 men in the series; 3 were in the second decade of life, 5 in the third, 11 in the fourth and 10 in the fifth; one patient was in the seventh decade. The duration of loss of hearing averaged twelve and a half years; the shortest duration of deafness was three months; 3 patients had been deaf more than thirty years. Twenty-three patients, or 80 per cent, had received previous treatment, without improvement or arrest of the progress of the deafness. In previous reports the author has stated that a loss of hearing greater than 50 decibels in the speech frequency range is of unfavorable prognosis for any improvement in hearing. This is demonstrated by the fact that 9 patients in this series who had hearing below "the prescribed level" showed no improvement at any time after operation. In every case except one in which there was congenital deafness with complete absence of the stapes (as found at operation), the tympanic membrane was definitely abnormal, showing thickening or retraction, or sclerosis of the posterior margin with diminished or absent light reflex (in 17 cases). In all cases, the

drum healed well and no infection developed. Of 15 cases in which tinnitus was present 5 experienced considerable relief, but tinnitus was not entirely relieved in any case. In one patient with toxic thyroid, pulsation tinnitus developed after operation—the only postoperative complication observed. In the cases in which the operation was done on both ears, the second operation was performed only after an interval of a year and if the hearing in the operated ear had become equal to or better than that of the opposite ear. In considering the audiometric results in this series, the most recently operated case is excluded. In the other cases audiometric tests were made at monthly intervals; the average audiometer curves for the 35 ears (29 patients) show a definite rise above the pre-operative level, even though the 9 unfavorable cases are included. The tendency to improvement is more marked for the frequencies 128 to 2048 than for the higher frequencies. The initial improvement occurs between the sixth and the ninth month after operation; this is followed by a decline and then another elevation of the hearing level between the thirteenth and nineteenth months. Of the total series of 30 patients, 18 report subjective improvement, or 60 per cent; if the 9 unfavorable cases are excluded, this would give subjective improvement in 85 per cent of cases which are considered suitable for operation. No patient's hearing was impaired as a result of the operation, even in the unfavorable cases. On the basis of these results the author concludes that the round window graft operation is justified in "a few carefully selected cases of deafness which have failed to respond to universally applied local therapeutic measures."

COMMENT

A careful, scientific report of results in a series of cases. By means of such meticulous reporting of indications and results from this operation and from similar reports of labyrinth fenestration operations we are gradually approaching sufficient knowledge to advise our patients as to the feasibility and possibility of surgical treatment of their deafness.

L.C.McH.

Aviation Deafness

P. A. CAMPBELL and J. HARGREAVES (*Archives of Otolaryngology*, 32:417, Sept. 1940) classify the deafness of aviators into four types on the basis of their study of hearing in army aviators. These types are: (1) Acute fatigue of the end organs of hearing and related structures; (2) chronic cumulative fatigue of the end organs and related structures; (3) changes in middle ear pressure resulting from changes in altitude if ventilation of the middle ear is faulty; (4) chronic deafness due to alteration in tissue resulting from faulty ventilation in the middle ear. The fatigue deafness, acute or chronic, is shown by a loss of hearing in the higher frequencies, around the 4096 area, and is a perception deafness. The deafness of the last two groups is shown by a loss of hearing acuity for the lower frequencies (128 to 1024) and is a conduction deafness. In any individual audiogram, these two types of deafness may be "mixed." Fatigue of the end organs of hearing is due not only to noise produced by the engine, the propellers, etc., of the moving aircraft but also to vibratory forces "in the infra-audible range." The decrease in oxygen at high altitudes may also be a factor in fatigue. It has long been recognized that changes in the pressure equilibrium between the outside and middle ear, such as occur in flying, cause changes in hearing acuity at the lower tone level. If such "insults" are repeated tissue changes take place in the middle ear, rendering the hearing loss permanent. These changes are intensified if there is any pathological condition in the Eustachian tubes. Advances in aircraft design and flight regulations should reduce the danger of loss of hearing in aviators.

COMMENT

These studies by flight surgeons will be of great value in the conservation of the hearing of our aviators. They are also of value to examiners in the estimation of aural conditions in regard to aviation training.

L.C.McH.

Suppuration of the Petrous Pyramid

R. L. MOORHEAD (*Archives of Otolaryngology*, 32:611, Oct. 1940) notes that the typical clearcut picture of suppuration of the petrous pyramid is well recognized by otologists, but in a review of the records for the past ten years, the author has found that there is considerable deviation from the typical clinical picture in a considerable percentage of cases. In a large percentage of the cases, signs of pyramid involvement develop after mastoidectomy, but they may occur at an earlier stage of the middle ear infection, as the infection of the pyramid is in reality an extension of the middle ear infection, not of the mastoid infection. In some cases in which there are signs of infection of the pyramid at the time of the involvement of the mastoid, they completely clear up after simple mastoidectomy. In other cases the pyramidal symptoms clear up, but recur. In one case in a boy eight years of age, the patient had made an apparently complete recovery from mastoidectomy, except that a slight discharge from the ear persisted. A month later he suddenly developed headache and pain behind the right eye, followed within about twenty-four hours by signs of meningeal irritation. Operation on the pyramid resulted in complete recovery. In another case in a girl ten years old, during the patient's first hospitalization, headache and paralysis of both the sixth and seventh nerve and signs of meningeal irritation developed during an acute otitis media; these symptoms subsided after simple mastoidectomy and the

administration of sulfanilamide. There was a latent period from August to December without any aural discharge, then earache, headache and vomiting developed; symptoms were relieved by operation on the pyramid. In a third case headache in the region of the eye occurred two months after mastoidectomy; this was accompanied by signs of labyrinthine involvement; all symptoms were relieved by operation on the pyramid, including the labyrinthine vertigo. In the diagnosis of pyramidal involvement, therefore, the history of an aural infection or mastoidectomy several months previously "should not be lightly passed over," even if there has been no persistent aural discharge in the interval. In regard to treatment, the author advises that if there are signs of pyramidal involvement at the time mastoidectomy is done, no extensive surgical procedures should be carried out, until the result of simple mastoidectomy has been determined. For the last two years he has advocated an approach to the pyramid along the floor of the middle fossa without radical mastoidectomy; with this operation the middle ear is intact and hearing good. He has found this procedure safe and not "too difficult for common use."

COMMENT

A practical discussion of the problem of petrositis. We agree that in many instances there is no necessity of performing a radical mastoidectomy in the surgical approach to the pyramid. Apparently this author also believes in complete simple mastoidectomies.

L.C.McH.

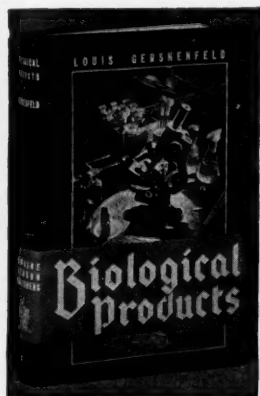
Some New York City Selective Service Data

A GENERAL health program designed to instruct younger people about preservation of teeth and eyesight should be instituted, as those defects were the greatest reasons for barring men from military training, according to Colonel Samuel J. Kopetzky, Chief of the Medical Division, New York City Selective Service Administration.

Commenting on a previously released statistical analysis of physical causes for rejection of men under the Selective Service System, in which the general health of the population was called "good", Colonel Kopetzky said there was a "surprisingly small number of glandular disturbances, pulmonary lesions and cardiac disturbances" and that "most of the physical faults discovered are irremediable under the best conditions in medical practice, except those due to neglect."

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| 10. Riboflavin Deficiency | |
| 11. Nature and Function of Other Members of the B-Complex | |
| 12. Deficiency Disease Related to the Vitamin B Complex | |
| 13. Nature and Functions of Nicotinic Acid (Vitamin P-P) | |
| 14. Pellagra | 19. Nature and Function of Vitamin E |
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Maher & Wosika's Cardiology

Electrocardiography. By Chauncey C. Maher, M.D. and Paul H. Wosika, M.D. Third edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 334 pages, illustrated. 4to. Cloth, \$4.00.

THE book opens with a presentation of Clinical Concepts of Heart Disease, which is in brief a summary of the fourth edition of *Nomenclature and Criteria for Diagnosis of Diseases of the Heart*, and so stated.

Arrhythmias then are considered adequately, after which the book moves into a discussion of the conduction system, the electrocardiograph and electrocardiograms.

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1820~1910

Classical Quotations

● Taken on the last two years, the death rate of Bombay (civil, military and native) is lower than that of London, the healthiest city of Europe. And the death rate of Calcutta is lower than that of Liverpool or Manchester! But this is not the greatest victory. The Municipal Commissioner of Bombay writes that the "huddled native masses clamorously invoke the aid of the Health Department" if but one death from cholera or smallpox occurs; whereas formerly half of them might be swept away and the other half think it all right. Now they attribute these deaths to dirty foul water and the like, and openly declare them preventable.

Florence Nightingale
Letter to Monsieur Mohl, 1869.

Serial studies in coronary occlusion are included. Seven E K G 's and one diagram serve to illustrate the presentation of digi-

tal influence, an important but often disputatious problem. Many other subjects are thoroughly discussed. The book is very much worth while. It is now in its third edition.

FRANK BETHEL CROSS

Albee's Latest Work on Bone Grafting

Bone Graft Surgery in Disease, Injury and Deformity. By Fred H. Albee, M.D. New York, D. Appleton-Century Company, [c. 1940]. 403 pages, illustrated. 8vo. Cloth, \$7.50.

DR. ALBEE has brought up to date our knowledge of bone graft surgery, in this, his latest work. The transplantation of bone for the correction and prevention of bone deformities is responsible for the alleviation of a tremendous amount of disability. The author was one of the pioneers

in developing this form of surgery, and he may be considered as its greatest exponent in the progress that it has made in the past twenty-five years.

The author not only describes his own methods of bone grafting in the different parts of the skeleton, but also covers the work of other surgeons, including all modifications of bone surgery that have been found to be practical. This volume should be in the library of every surgeon interested in surgery of bones.

J. B. L'EPISCOPO

Popular Book on the Viruses

The Virus: Life's Enemy. By Kenneth M. Smith, F.R.S. New York, The Macmillan Company, [c. 1940]. 176 pages. 12mo. Cloth, \$2.00.

THIS is an interesting, informative, and timely little volume. Diseases caused by viruses are again making the headlines. The proper understanding of what viruses are and how they produce their effects is important to all in the field of infectious diseases. Dr. Smith has presented in a very readable fashion a large number of facts concerning these disease producing agents. This book deserves to enjoy a wide circulation.

MORRIS L. RAKIETEN

Another Edition of Cecil's Medicine

A Textbook of Medicine. By American Authors. Edited by Russell L. Cecil, M.D. Fifth edition. Philadelphia, W. B. Saunders Company, [c. 1940]. 1744 pages, illustrated. 8vo. Cloth, \$9.50.

IT seems scarcely necessary to draw attention to this textbook, which has become one of the standard works for both students and practitioners. As before, the fifth edition consists of articles on different subjects by authorities in the specific fields. This, of course, has certain advantages and disadvantages. However, owing to the rapid growth in medicine in recent years it is possible for only a few to be able to write a textbook covering all aspects. In the present edition the various topics have been brought up to date. A few new subjects are included, and some others completely rewritten. There is no doubt that this volume presents an admir-

able account of all phases of medicine and will be valuable, both as a textbook for students and a reference book for practitioners.

J. HAMILTON CRAWFORD

Eye-Sight Development

The Amblyopia Reader (A system of eye-sight development). With a foreword and notes by Margaret Dobson, M.D. New York, American Optical Company, [c. 1940]. 93 pages, illustrated. 8vo. Cloth.

IN this novel book, Dobson has arranged a fascinating method for stimulating the suppressing amblyopic eye by the use of juvenile drawings and rhymes of different or graded sizes as a basis for progressive training.

These stories and nursery rhymes have been printed in an apparently haphazard arrangement of orange and black lettering. The sound eye is covered by a ruby filter so as to render the red letters invisible to that eye. By this means the poorer amblyopic eye sees both the red and black type, although with difficulty; the sound eye sees black type only. Through such combination both the poor and the good eyes are put to a severe task to make sense out of this picture.

The training of the amblyopic case has been a disheartening problem, and any suggestions or methods that would serve to stimulate such an eye through conscious effort should prove valuable. For that reason, Dobson's book is a worthy contribution to ophthalmology.

EMANUEL KRIMSKY

New Edition of Taber's Dictionary

Taber's Cyclopedic Medical Dictionary Including a Digest of Medical Subjects. By Clarence W. Taber. Philadelphia, F. A. Davis Company, [c. 1940]. 1488 pages, illustrated. 12mo. Cloth, \$2.50.

THIS book aims to be a dictionary of medical subject matter as well as a dictionary of medical terms. It is time saving in so far as it enables one to find in brief compass what would otherwise entail the search of many sources. Thus after a cyclopedic definition of the word vitamin there follows much information about each particular vitamin, vitamin diets, etc.

If it is a food, say spinach, everything known about it appears.

While this volume carries a few thousand and fewer words than large unabridged dictionaries, it gives a working knowledge of many subjects. There are many tabulations of great value in the Appendix, for example, over 370 questions to ask a patient in five different languages.

ARTHUR C. JACOBSON

A Study of Twins

Multiple Human Births. Twins, Triplets, Quadruplets and Quintuplets. By Horatio H. Newman, Ph.D. New York, Doubleday, Doran & Company, Inc. 1940]. 214 pages, illustrated. 8vo. Cloth, \$2.50.

THIS book is written primarily for twins and "the 10,000,000 persons in this country who are closely related to twins in one way or another." It is the first book in the American Association for the Advancement of Science Series. The author is professor of Zoology at the University of Chicago. The Dionne Quintuplets are rather fully discussed, and interesting photographs of these famous children and other multiples are included. The whole subject of twinning is discussed. The public will like this book, and so will the medical profession.

CHARLES A. GORDON

Congenital Syphilis

Congenital Syphilis. By Charles C. Dennie, M.D. and Sidney F. Pakula, M.D. Philadelphia, Lea & Febiger, Inc. 1940]. 596 pages, illustrated. 8vo. Cloth, \$8.00.

THE general subject of syphilis, as well as its treatment and other branches, is well covered by a number of excellent books. While congenital syphilis is discussed in these various volumes, and allotted a few chapters, it is relegated to a minor position, and apparently considered of secondary importance as far as syphilis is concerned. That the recognition of congenital syphilis is at times very difficult, and its prevention and treatment very important is not questioned by any one. Congenital syphilis, therefore, has not received the attention it rightly deserves. So, when a book of about 600 pages, devoted exclusively to congenital syphilis, by authors of unquestionable ability, is offered to the medical profession, it should be highly welcomed as a valuable addition on the

question of syphilis.

This work begins with a discussion on the methods of examination of the congenital syphilitic infant, and goes through the entire field of congenital syphilis to complete therapy. Not only are statistics and facts clearly presented, but many important subjects are interestingly discussed. For example, the immunologic aspect of syphilis, that is, the part played by the reticulo-endothelial system, the skin, etc., in the defense mechanism of the body is elaborated and discussed from various view points. About 80 pages are devoted to bone and joint syphilis, and about 100 pages to treatment. Considerable space is devoted to the examination of the pregnant woman for syphilis, and to the treatment of the syphilitic pregnant woman. The whole text is replete with many illustrations, x-ray photographs, charts, and case histories. The bibliography is complete, and an authors' index together with a large general index winds up an able and thorough discussion of the whole question of congenital syphilis. The authors, Drs. Charles C. Dennie and Sidney F. Pakula, are to be congratulated on this excellent presentation of a rather difficult subject. This book should be in the library of every medical man, be he specialist or general practitioner.

ABRAHAM WALZER

Lowsley & Kirwin's New Urology

Clinical Urology. By Oswald S. Lowsley, M.D., and Thomas J. Kirwin, M.D. Volumes I & II. Baltimore, Williams & Wilkins Company, Inc. 1940]. 1684 pages, illustrated. 8vo. Cloth, \$10.00.

THIS fine work has good print and splendid illustrations with many of Didusch's classical drawings. We like the systematic arrangement, the brief clear cut statements and definite directions for treatment. For students and general medical men it will prove most useful because it is not over burdened with details and qualifications of therapy. It is a fine book, much better than their earlier textbook. The ripened experience of the authors in practice and teaching at the New York Hospital is everywhere evident. The presentations of surgical procedures, the discussions of underlying pathology and physiol-

ogy of diseased genitourinary organs, and the directions for the trial and use of non-surgical relief of these conditions, make this book one of the most modern and useful of the 1940 output.

The discussion of gonorrhoea and the evaluation of the newer remedies, the conservative and proper evaluation of the worth of transurethral prostatectomy, the fair and full statements as to the present opinion of the desirability of radium and X-ray therapy in genitourinary diseases are among the many features that make this text a delight.

We wish the publishers of all two volume works would put an index in each volume. It is a nuisance to be compelled to pick up the second volume to find an index to the first.

STURDIVANT READ

Pre-Natal Development

Physiology of the Fetus. Origin and Extent of Function in Prenatal Life. By William F. Windle. Philadelphia, W. B. Saunders Company, [c. 1940]. 249 pages, illustrated. 8vo. Cloth, \$4.50.

THE book is unique in that it is concerned with the functional aspects of development, a new and unusual subject for a text. The author has assembled and summarized scattered physiologic observations on fetuses, including much work of his own. The problems involved in most investigations of the physiology of the fetus are complicated and difficult to control due to interrelationships of the maternal and fetal organisms and to the inaccessibility of the fetus. Thus, while the subject matter is admittedly incomplete, much has been accomplished during the last few years and these observations are clearly presented.

Those in the fields of neurology, psychology and pediatrics, who are interested in problems of behavior, will find the book valuable. For the obstetrician, the chapters on the fetal heart, electrocardiography, and fetal respiration are especially interesting.

ALEXANDER H. ROSENTHAL

A German Symposium on Metabolism

Stoffwechselerkrankungen. Bericht über den Fortbildungskurs Karlsbad vom 26. Juni bis 1. Juli 1939. Im Auftrag der Akademie für Ärztliche Fortbildung Dresden. Herausgegeben von Professor Dr. L. R. Grote. Leipzig. Verlag von

Theodor Steinkopff, [c. 1940]. 292 pages, illustrated. 8vo. Paper, RM. 11.25.

THE individual chapters of this booklet are not uniform as far as their scientific or practical medical value is concerned. Each chapter represents a lecture previously delivered by one of the various authors, except that L. R. Grote contributed three chapters, each of them being especially good. The inequality of chapters by the various authors might be caused partly by the purpose of the booklet to propagate treatment by natural methods only, including diets of uncooked food. With regard to this special feature one of the contributors tries to find a compromise by stating that any treatment by chemically well defined drugs can be considered as a treatment by natural methods.

MAX G. BERLINER

Mental Treatment

Psychotherapy. Treatment that attempts to improve the condition of a human being by means of influences that are brought to bear upon his mind. By Lewellys F. Barker, M.D. New York, D. Appleton-Century Company, [c. 1940]. 218 pages. 12mo. Cloth, \$2.00.

DR. BARKER is Emeritus Professor of Medicine of the Johns Hopkins University Medical School. Throughout his long and honorable career as a teacher and internist he has shown unusual interest in neurology and psychiatry.

The book under review is the result of a personal and rich experience in dealing with many neurotic patients. He defines psychotherapy as the "treatment that attempts to improve the condition of a human being by means of influences that are brought to bear upon his mind (psyche)." He reviews the various methods of psychotherapy, and gives a brief description of different schools dealing with the subject. There is a rather kaleidoscopic view of the entire field of psychiatry with special emphasis on the neuroses and their treatment.

This book is a useful little volume that will help the general practitioners in medicine who wish to gain an understanding of the neurotic manifestations in many of their patients. It is also a record of the experiences and views of one of the leading figures in American medicine.

IRVING J. SANDS

Vitamins and Nutrition

Vitamin Therapy in General Practice. By Edgar S. Gordon, M.D., and Elmer L. Sevringhaus, M.D. Chicago, The Year Book Publishers, [c. 1940]. 258 pages, illustrated. 8vo. Cloth, \$2.75.

THIS little volume, which is written for the general practitioner, covers more than the title suggests. The part devoted strictly to vitamin therapy comprises about one-half of the book.

The other hundred pages discuss nutrition in general, with chapters on carbohydrates, proteins, fats, minerals, and also some information on reducing, and dental problems in nutrition.

The book is well written, as this is not the first one by these authors, but it seems to the reviewer that the title of *Vitamin Therapy* is misleading because of the large amount of general nutritional information which is distinct from the vitamin therapy section.

MORRIS ANT

Green's Latest Pathology

Green's Manual of Pathology. Sixteenth edition revised and enlarged by H. W. C. Vines, M.D. Baltimore, Williams & Wilkins Company, [c. 1940]. 1166 pages, illustrated. 8vo. Cloth, \$8.50.

THE sixteenth edition of Green's Manual of Pathology as revised and edited by H. W. C. Vines is divided into two parts; general pathology and special, covered in 1138 pages. In the preface it is stated that "It would no doubt be nicer if students were taught less and were taught it more thoroughly" and then allowance is made for the large size of general textbooks.

This edition is well written, and covers its field in a complete manner. References to literature are totally avoided, although authors are cited. It is regrettable that original classifications and terminologies are employed, which are unfamiliar and not explained in terms of current usage. The illustrations are ample and exceptionally clear. The present author is to be complimented on the wealth of information included in this work, and it should serve excellently as a manual to the student starting his medical courses in pathology, and to the general practitioner as a useful reference book in this field.

MAX LEDERER

Sever's Orthopedics

Principles of Orthopedic Surgery. By James W. Sever, M.D. Third edition. New York, The Macmillan Company, [c. 1940]. 418 pages, illustrated. 8vo. Cloth, \$3.25.

THE third edition of this small volume contains all the data necessary for an understanding of common orthopedic problems which should be familiar to students and nurses. In one chapter, details in the mechanical and pathological production of obstetrical paralysis of the upper extremity together with a description of the treatment, both conservative and operative, is explained in considerable detail. Other chapters dealing with plaster of paris, orthopedic apparatus, orthopedic shoes, and physio-therapy all aid in making this volume complete and instructive. Much space is given to the description of various forms of apparatus throughout the text.

The book is beautifully bound in leather and printed on first grade paper with print which is conducive to easy reading. The volume is a valuable addition to any doctor's library.

HERBERT C. FETT

Doctoring in the Hills of Colorado

Doctor at Timberline. By Charles F. Gardiner, M.D. Caldwell, Idaho, The Caxton Printers, Ltd., [c. 1938]. 315 pages, illustrated. 8vo. Cloth, \$3.00.

IN a recent list of preferred readings, Prof. Phelps mentioned *Doctor at Timberline* as one of the best of the recent series of doctor books. We will be disappointed if a reading of this thrilling account of doctoring in Colorado, 50 years ago, does not bring a quick and general agreement with Prof. Phelps.

Dr. Gardiner became a frontier doctor after leaving the comforts of a New York home, "to go to some wild place." He practiced first among the silver miners at the timberline, and then moved to a slightly lower country among the cowboys, the only doctor for 100 miles around. The various experiences are not necessarily arranged chronologically, and the interest is carefully maintained so that the final story is a climax. There is no attempt at braggadocio, no impression of extraordinary skill. The doctor does not hesitate to admit that when peril and danger threatened he knew what fear meant. The

icy winds of the highest hills and the suffering heat of the low lying deserts were all in a day's work. It required 24 hours to get to a patient, maybe a longer stay at the bedside, before the hard road homeward. He seemed to like his patients and states that "the old-time cowboy had a code of conduct quite as binding as that of any gentleman of civilization." Dr. Urling C. Coe, who wrote *Frontier Doctor*, tells of a New York doctor who had been listening to accounts of practice on the frontier and who observed, "there is something in the atmosphere of the far West which makes men who breathe it ungodly liars." You will not be so impressed by Dr. Gardiner. His stories ring true and are well written.

JOSEPH RAPHAEL

Child Guidance

As the Twig is Bent. By Leslie B. Hohman, M.D. New York, The Macmillan Company, [c. 1940] 291 pages. 8vo. Cloth, \$2.50.

AS THE TWIG IS BENT presents its subject matter in clear, concise language readily understandable to lay persons. It takes a middle course between the old school and the newer progressive ones. Conceding that initiative in a child is a good thing, the author feels that there should be some direction in a child's energies so that it may lead to definite constructive ideas rather than being scattered. This is necessary for adjustment to adult life, as it is impossible to have one's own way many times. An adult has a certain groove in which to fit, and too wide a deviation from this will leave him socially

maladjusted.

Pitfalls are pointed out which alert parents may profitably avoid—thus sparing their child and themselves many unpleasant habits or situations later. The author cautions against the dramatization of certain scenes which if successfully repeated would lead to bad habits. A copy of this book will be a valuable addition to the parents' reference material.

G. MARJORIE WILLIAMS

Birth Problems in Sweden

Report on the Sex Question. By The Swedish Population Commission. Translated and edited by Virginia C. Hamilton, M.D. Baltimore, Williams & Wilkins Company, [c. 1940]. 182 pages. 8vo. Cloth, \$2.00.

THIS is the 1936 report of the Swedish Population Commission translated into English by Dr. Virginia Clay Hamilton.

The decrease in the Swedish birth rate has been dramatic. In 1880 the crude rate was above 30; since 1933 it has been consistently around 14. The Population Commission was appointed in 1935. Its present report shows that the declining fertility of the Swedish people is due to psychological change in the sex life of the individual, namely to "an increase in the intentional practice of birth control". The proposed remedies are sex enlightenment and maternity aid.

The booklet should be read by anyone interested in the main problem. The discussion is eminently sensible, and the findings apply to us as well as to the rest of the Western World.

H. L. WEHRBEIN

BOOKS RECEIVED

for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

Detailing the Physician. Sales Promotion by Personal Contact with the Medical and Allied Professions. By Tom Jones. New York, Romaine Pierson Publishers, Inc., [c. 1940]. 214 pages. 8vo. Cloth, \$2.75.

The American and His Food. A History of Food Habits in the United States. By Richard O. Cummings. Chicago, University of Chicago Press, [c. 1940]. 267 pages, illustrated. 8vo. Cloth, \$2.50.

Hydrocephalus: Its Symptomatology, Pathology, Pathogenesis and Treatment. By Otto Marburg, M.D. New York, Oskar Piess, [c. 1940]. 217 pages, illustrated. 8vo. Cloth, \$3.00.

Abdominal Operations. By Rodney Maingot, F.R.C.S. Volumes I and II. New York, D. Appleton-Century Company, [c. 1940]. 1385 pages, illustrated. 8vo. Cloth, \$18.00 per set.

Growing Out of Babyhood. Problems of the Preschool Child. By William S. Sadler, M.D. and Lena K. Sadler, M.D. New York, Funk & Wagnalls, [c. 1940]. 350 pages. 8vo. Cloth, \$2.50.

Dietetics Simplified. The Use of Foods in Health and Disease. By L. Jean Bogert, Ph.D. Second edition. New York, The Macmillan Company, [c. 1940]. 742 pages, illustrated. 8vo. Cloth, \$3.00.

A Textbook of Psychiatry. By Arthur P. Noyes, M.D. and Edith M. Haydon, R.N. Third edition. New York, The Macmillan Company, [c. 1940]. 315 pages. 8vo. Cloth, \$2.50.

The New International Clinics. Original Contributions: Clinics; and evaluated reviews of current advances in the medical arts. Edited by George M. Piersol, M.D. Volume IV, New Series Three. Philadelphia, J. B. Lippincott Company, [c. 1940]. 326 pages, illustrated. 8vo. Cloth, \$3.00.

How To Raise a Healthy Baby. Complete Information from Birth to the Sixth Year. By L. J. Halpern,

M.D. New York, Prentice-Hall, inc., [c. 1940]. 388 pages, illustrated. 8vo. Cloth, \$1.95.

A Family Doctor's Notebook. By I. J. Wolf, M.D. New York, Fortuny's, [c. 1940]. 315 pages. 8vo. Cloth, \$2.00.

Medical Center. By Faith Baldwin. New York, Farrar & Rinehart, Inc., [c. 1940]. 370 pages. 8vo. Cloth, \$2.50.

The Doctor and the Difficult Child. By William Moodie, M.D. New York, The Commonwealth Fund, [c. 1940]. 214 pages. 8vo. Cloth, \$1.50.

Coming Section Meetings of the American College of Surgeons

Dates	City	Headquarters Hotel	Participating States
March 10 11 12	Minneapolis Minnesota	Nicollet	Minnesota, North & South Dakota, Iowa, Nebraska, Montana, Kansas, Wisconsin - Manitoba
March 17 18 19	Pittsburgh Pennsylvania	Wm. Penn	Pennsylvania, Ohio, Virginia, West Virginia, Delaware, Maryland, New Jersey, New York, District of Columbia
March 26 27 28	Salt Lake City	Utah	Utah, Oregon, Washington, California, Nevada, Idaho, Wyoming, New Mexico, Arizona, Colorado, Montana.

Hospital conferences will be held in connection with each of these meetings. Fellows of the college, members of the medical profession at large, and persons interested in the institutional care of the sick and injured are invited to the Sectional Meetings; on the final evening of each meeting a meeting on health conservation to which the public is invited will be held.

Address all correspondence to 40 East Erie Street, Chicago, Illinois.

Tuberculosis in New York City Relief Recipients

IN January, 1940, every homeless relief recipient, totaling 8,085 men and women, was x-rayed by the Department of Health with assistance of WPA. Of the number examined, 10.9%, or 882 individuals, were found to have an arrested and apparently cured case of tuberculosis; 3.7%, or 301 men, were in an active stage. Arrangements were made for necessary medical care for the men affected, including clinical care and hospitalization.

Brooklyn Urological Society

THE following officers of the Brooklyn Urological Society were recently elected: President, Emanuel Salwen, M.D.; Vice-President, James W. McManus, M.D.; Secretary-Treasurer, Samuel E. Last, M.D.

Conservation of Defense Manpower

STATE Organization of the National Committee for the Conservation of Manpower in Defense Industries as an arm of the New York Defense Program was recently effected.

Sponsored by the U. S. Department of Labor, the function of the National Committee is to promote accident prevention work in plants throughout the country working on defense contracts. The Committee is composed of prominent safety leaders and is administered through regional directors, each of whom supervises several states. E. G. Quesnel, of New York City, Safety Director of the Borden Company, heads Region No. 2, which includes New York State.

The newly formed state committee will work directly with industry through some 30 field agents appointed from the ranks of safety engineers currently employed in industry. These men, sworn in as special agents of the U. S. Department of Labor, are employed on a "dollar-a-year" part time basis.

They are practical, experienced safety engineers who will act as consultants and cooperate fully with plant safety programs now being carried on. Their work will be "to help develop and strengthen plant accident prevention work in order to insure uninterrupted production of material vital to America's defense."

Prognosis

GOOD

Treatment

ARRANGEMENTS were made for frequent psychotherapeutic consultations, the purpose of which was to afford opportunities whereby she could gradually be built up through rapport to recognize, accept, and resolve her guilt and frustration feelings. The next day, however, she confessed to her husband that she did not love him and wished to be free to return to Greece and see if she could marry the Greek physician whom she loved alone. The husband took the confession in a splendid adult manner and is planning to give her a divorce, and I may add, his good wishes for the patient's happiness which he was unable to fulfill. I have not heard from the patient or her physician since.

It may be that the anxiety attacks will disappear with the resolution of her guilt complex in connection with her husband which, of course, gave rise to her sinning against God because of craving for a baby. The fact that she dreamt about snakes (phallic symbol) indicated a resentment of her husband which was feeding guilt feelings because she was experiencing gratifications not on the basis of adult but rather incest love. Patient spontaneously stated that at the age of nine she experienced a deep emotional trauma when she was sexually approached by a man with whom she thought she was in love. It is likely that the present anxiety attacks etiologically go back to "castration" or deprivation feelings in connection with an unresolved Oedipus complex. Unconsciously she may be still seeking a love object in the forbidden father. Consciously, however, she is doing well in squaring herself with her conscience by seeking marriage with a legitimate love object, the Greek physician.

214 STATE STREET.

Hospital Plumbing Fixtures

THE Standing Committee in charge of Simplified Practice Recommendation R106-30, for Hospital Plumbing Fixtures, has approved a revision of the recommendation, and the Division of Simplified Practice of the National Bureau of Standards has mailed copies to all interests for consideration and approval.

As originally promulgated in 1930, the recommendation established a simplified schedule of standard stock items for installation in hospitals and similar institutions.

The current revision was drafted by a joint committee of representatives of the Sanitary Cast Iron Enameled Ware Association, the Vitreous China Plumbing Fixtures Association, and Sanitary Brass Institute.

Mimeographed copies of the proposed revision may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

New York City Health in 1940 Shows Gains

THE year 1940 gave New York City the lowest death rates ever experienced for infant and puerperal mortality, pulmonary tuberculosis, diphtheria, pneumonia and typhoid fever. The total number of deaths from all causes at all ages amounted to 76,008, giving a general death rate of 10.3 per 1,000 population. The birth rate recorded in the city was definitely higher than it has been for several years.

The Commonwealth Fund

APPROPRIATIONS of approximately \$2,000,000 for philanthropic purposes are listed by the Commonwealth Fund in its report for the year ending September 30, 1940. A third of this total was devoted to medical research and medical education, and nearly half was earmarked for other health services, including chiefly aid to rural health departments and rural hospitals.

EDITORIALS

The Population Problem and Its Democratic Solution

THE alert physician will be interested in population problems partly because the medical profession played a major role in creating them; partly because no class in the community is more unselfishly and disinterestedly devoted to family welfare in its broad aspects. (I can say this as a professional sociologist who is not himself a physician.) How did physicians help create the problem? By saving lives. For it is now an accepted scientific fact that the phenomenal growth of population in the Western World during the nineteenth century was the greatest that all history records; so phenomenal in fact that it seems improbable that it will ever be repeated in history. It is also accepted that the chief causes of this unheard of growth were the Industrial Revolution, which increased subsistence, and the growth of preventive medicine, which saved lives, especially in infancy.

MALTHUS feared the pressure of population on food. Now we "fear"



**ESTABLISHED
IN 1872**

the pressure of food on population. Many foods are a drug on the market in the United States at present. Yet there are important residues of truth in Malthus' teaching. He merely made the mistake of overgeneralizing from the social and economic conditions in a particular

period of history. That is a common fault of social science writers and one that can easily be forgiven. We must guard against the same error in reading the books of the "depopulationists."

However, a recent book by Professor Gunnar Myrdal (*Population: A Problem for Democracy*, Cambridge, Harvard University Press, 1940), one of the leading Swedish economists, and one of the best thinkers in his field in the world, represents much sober analysis of the ideological crisis we are likely to be called upon to face here in this country when it becomes generally known that the population of this country will, in a few decades, become stationary and thereafter probably decline. Crackpot proposals will certainly arise; and Professor Myrdal hopes that we will be able to learn from the Swedish experience and

plan now for the necessary familial and distributional reforms that he thinks will be required to solve the problem.

THESE Godkin lectures at Harvard are not so much concerned with tracing in detail the reforms employed in the "Swedish laboratory," as he calls it, as they are concerned with inducing conservative American economists and sociologists to see the importance for the future of intelligent planning on population if family welfare is to be conserved and expanded. No person, it may be said at once, is better qualified for this task than Professor Myrdal, for, as a leading economist, and as the instigator in the Riksdag of the Swedish Population Commission, he has gone over all the problems which our democracy is likely to face in the population field in the next few decades. He combines the clear thinking of the scientist and statistician with a statesman's regard for long-run welfare of the family and the state; and he is conspicuously lacking in that intellectual myopia which characterizes all too many American economists of the *laissez-faire* type; too many of the sociologists who fear they will be dismissed by thoughtful people as reformers if they attempt to use their talents for the solution of pressing national and social problems.

Professor Myrdal insists that the difficult problem of inducing the healthy and intelligent to reproduce in sufficient numbers must be met within the framework of democratic institutions and not by means of fascist, short-cut pressures intolerable to a free people. Even if more reproduction is needed, it must not be at the expense of the poor and ignorant, nor of the unhealthy. In any society, at any level of population, child-spacing will always be necessary for the protection of the health and welfare of mothers. The children of the hereditarily defective we don't want.

THE chief motive to limitation of births at present is economic. Therefore Myrdal recommends subsidies in *kind* (not money) for better housing, nutrition of children, etc., without a means test. Married women should be protected in their jobs

when they try to combine maternity with a limited career. A more thorough child welfare program is called for to reduce the economic burdens of those who bear the brunt of the costs of child bearing. The cry of socialism is certain to be raised; but I am inclined to agree with Myrdal's implicit assumption here that we shall have to take our choice between distributional reforms consistent with democratic institutions and some fascist solution. We will get the latter unless we plan *now* for a democratic solution. Such seems to be the burden of his plea; and it seems to me sound in essence. Compromise is usually necessary in the solution of great national problems in democratic countries; and those who obstruct it merely pave the way for more authoritarian measures.

THE net reproduction index in Sweden is now at 75. (100 implies a stationary population in the future.) Myrdal thinks the figure will go to 50 before the tide is turned. He wants us to profit by the Swedish experience with democratic solutions. Will American scientists rise to the challenge in time before the politicians mess it up and the religious bigots prevent an intelligent and thorough solution? We can only hope that such will be the case. Our government, physicians should realize, has already made a good start in the able publication of the Committee on Population of the National Resources Committee;* and there are signs that the leaders of the birth-control movement are beginning to take less of a negative and more of a positivistic attitude toward their problems. These are small but sound steps in the right direction.

NORMAN E. HIMES

Smeurers of Hippocrates

"I WILL not give to a woman a pessary to produce abortion." These words occur in the original pagan reading of the Hippocratic Oath.

"I will not aid a woman to procure

* Available from the Superintendent of Documents, Washington, D. C. for 75c in coin. This quarto volume with its diagrams and remarkable color plates would cost at least \$5.00 if it had to be sold on a profit basis.

abortion." These words are found in the Christianized version of the Oath.

Those who favor the legalization of abortion insist that Hippocrates reported a case in which he advised a young harp-player who desired to end her pregnancy to jump in the air, striking her heels against her hips. The record goes on to say that after the seventh jump she promptly aborted.

From this case report, taken from the alleged writings of Hippocrates, it has been deduced that Hippocrates was merely opposed to putting abortifacient agents into the hands of the laity, and that the Christianized version of the Oath should be discounted.

Garrison points out that the Oath is not usually regarded as a genuine Hippocratic writing. The works attributed to Hippocrates are, in fact, "a Canon or scriptural body of doctrine and . . . probably the remains of the library of the school at Cos."

Thus we may say that while there is no surety that Hippocrates wrote the Oath, neither is there certainty that the case report was written by him, in view of the probability of many authors having contributed to the Greek medical scriptures.

In view of the known ethical spirit of Hippocrates we are free to believe that he did not write the case report, for he was one of the wisest of men, familiar with the injuries to life and health produced by improperly invoked abortion.

The eager advocates of legalized abortion pounce upon the contradiction between the Oath and the case report. They presumably care little for the check imposed upon their wishful emotions by the classical philologists.

Therapeutic Abortion

WITH progress in modern medicine, the indications for interruption of pregnancy are becoming fewer. Maternal welfare groups in their attempt to reduce maternal mortality and morbidity have contributed much and impressed the profession with the role played by prenatal care. Toxemia and eclampsia are on the decline. Education of the physician and

the public has been a great help. Classification of the pregnant patient according to the various medical complications with the co-operation of the internist has diminished risks and the end result has been motherhood to those unfortunately so afflicted. All these combined factors have done much to diminish the indications for such so-called therapeutic measures. For the occasional case in which therapeutic abortion is done in certain clinics, one must not lose sight of the laws of New York State governing this practice. The following sections, 80 and 1050, are taken from the New York Penal Law:

Sec. 80. Definition and Punishment of Abortion.
Sec. 1050. Manslaughter in First Degree.

Sec. 80. A person who, with intent thereby to procure the miscarriage of a woman, unless the same is necessary to preserve the life of the woman or of the child with which she is pregnant, either:

1. Prescribes, supplies or administers to a woman, whether pregnant or not, or advises or causes a woman to take any medicine, drug or substance; or

2. Uses or causes to be used any instrument or other means, is guilty of abortion, and is punishable by imprisonment in a state prison for not more than four years, or in a county jail for not more than one year.

Sec. 1050. A person who provides, supplies or administers to a woman, whether pregnant or not, or who prescribes for, or advises or procures a woman to take any medicine, drug, or substance, or who uses or employs, or causes to be used or employed, any instrument or other means, with intent thereby to procure the miscarriage of a woman, unless the same is necessary to preserve her life, in case of the death of the woman, or if any quick child of which she is pregnant, is thereby produced, is guilty of manslaughter in the first degree.

(a) If child had not quickened, or does not die, imprisonment for not more than 4 years. If child had quickened, and dies, imprisonment for not more than 10 years.

(b) Imprisonment for not more than 4 years.

(c) First degree manslaughter, with imprisonment for not more than 10 years.

It is apparent that interruption of pregnancy is a violation of this penal code and the penalty is stated above. There is no definite law as to exemption as appears in laws of some other states. The clause "unless the same is necessary to preserve her life" is inserted to permit such therapeutic procedure. Nevertheless, the burden of proof is entirely left to the physician. Hence, one must protect oneself when confronted with this problem. How can the medical profession protect itself from the technicality of the law? It is customary in most of the hospitals that when this procedure is indicated, the decision must be reached by at least two reputable physi-

cians independently, and one of these experts should be an internist. If pregnancy affects a certain special organ or system of the body, a specialist in that respective field should be consulted. All opinions and advices should be included as part of the record. The procedure to be employed should be decided upon by the obstetrician or gynecologist in attendance. Since therapeutic abortion is an operation that calls for much judgment and skill and the most

careful and rigid surgical technique, it should be performed in a hospital. The postoperative care should be similar to that of the postpartum patient. Unless these requisites are met, public safety is endangered and the physician may find himself answering charges implying possible suspension and revocation of his license and the loss of means of livelihood.

VINCENT P. MAZZOLA

Physicians Needed For Army Service

The physician, like every other American, has become actively interested in our national security and stands ready to contribute his services as required for military preparedness.

The New Journal, CANCER RESEARCH

THE first number of the new journal, **CANCER RESEARCH**, contains 13 original articles and 241 abstracts of papers published in the latter half of 1940. Designed primarily as a monthly journal of articles and abstracts reporting results of research on cancer, the new publication plans to make information available to laboratory workers, clinicians, and all persons concerned with the attack on malignant disease.

The subjects of the original articles include the following: the experimental production of cancer of the liver in rats by feeding butter-yellow, an azo dye; immunity against a cancer of rabbits; differences between malignant blood cells from induced and spontaneous leukemias in mice; stimulation and retardation of the action of cancer-producing chemicals in association with other compounds; an experimental method for removing cancer in rats by chemosurgery; tumors of guinea pigs; the effects of various hormones on the pro-

duction and characteristics of cancers; and the excretion of sex hormones by women with cancer of the breast.

Eight of these articles were written by investigators working in this country, four by workers in England, and one by an author in Italy.

The Electric Blanket

THE automatic blanket, subject of limited production and sales by General Electric in the last four years, has undergone improvements based on studies of performance in several thousand homes throughout the country and is now being marketed as a single standardized product, available in five different colors.

New factory facilities for the automatic blanket have been established in Bridgeport, Conn., and the results of the current season's test sales efforts have been so outstanding that G-E's Pioneer Products Section is already drawing analogies between the electric blanket and the electric refrigerator in terms of man's struggle through the centuries to solve the problems of comfortable living.

THE ROLE OF THE *Pancreas* IN DISORDERS OF THE NERVOUS SYSTEM

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THE role of the pancreas in disorders of the nervous system has been recognized for a long time but its importance has been chiefly in relation to diabetes. In recent years, however, the pancreas has attracted attention by disorders other than the lack of insulin reserve. These will be briefly mentioned first.

Psychoneurotic Symptoms as Early Manifestations of Carcinoma of the Pancreas

CARCINOMA of the pancreas, especially of the tail, is often difficult to diagnose before the appearance of gastrointestinal symptoms and signs. In 1931, Yaskin (1) called attention to the fact that such tumors may exhibit as their earliest outstanding symptoms obstinate insomnia, not ascribable to pain and not relieved by usual sedatives, depression with crying spells, marked anxiety with fear of serious organic disease without, however, any feeling of unreality or any change of perception, memory, orientation or judgment. Yaskin's observations were confirmed by the report of 3 additional cases

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Presented before the Diabetes Commission of Pennsylvania, in Philadelphia, on September 30, 1940.

from the Mayo Clinic in 1937 (2). These observations, while not pathognomonic, put both the neuropsychiatrist and the gastro-enterologist's interest on guard against a false diagnosis of psychoneurosis, especially in middle aged or elderly individuals.

Hyperinsulinism and Other Forms of Hypoglycemia

HYPOLYCEMIA is becoming increasingly more important as a causative factor of neurological conditions. The manifestations of hypoglycemia vary in severity from mild nervous tension through anxiety attacks and irregular muscle twitchings to severe generalized convulsive seizures. Cases of hypoglycemia are often treated as hysteria [Yaskin and Dillon (3)]. A great deal has been learned regarding the manifestations of hyperinsulinism from the inadvertent reactions in the treatment of diabetes and more particularly from the use of insulin in the shock treatment of the psychoses.

The cause of hypoglycemia is usually difficult to determine and the diagnosis of hyperinsulinism requires the exclusion of disease of the liver, glands of internal secretion other than the pancreas (supra-

renals, pituitary, thyroid, thymus, sex) and of low renal threshold for sugar. Hyperinsulinism is, therefore, diagnosed largely by exclusion and may be due to tumors of the islands of Langerhans, or to excessive export of insular substance associated with hypertrophy of the islands, or to functional conditions associated with instability of the autonomic nervous system. In the latter condition the fasting blood sugar rarely reaches below 70 mg. per 100 c.c. of blood and the sugar tolerance test is not so low as in tumors. According to Whipple (4), a tumor may be suspected when (a) the postabsorptive blood sugar value is less than 50 mg. per 100 c.c., (b) symptomatic attacks of hypoglycemia occur only when patient is fasting and (c) such attacks are relieved by sugar. To these criteria may be added another. If, in the course of time, the attacks increase in frequency in spite of rigid dietetic regulations, it is reasonable to assume that the lesion is expanding and surgical exploration is justifiable. This course of events prompted me in recommending an exploration in a young man who developed epileptic seizures. A benign adenoma was removed and the patient made a complete recovery (5).

Neuropsychiatric Complications of Diabetes Mellitus

IT has long been established that nervous disorders are not the determining cause of diabetes mellitus. Nearly any neurologic and psychiatric disturbance may occur in association with insular insufficiency but, with few exceptions, there exists no known etiologic relationship in the coexisting conditions. The conditions regarded as complications of diabetes mellitus include diabetic coma, certain psychotic reactions, neuritis of the nerves of the extremities and of the cranial nerves, pseudotabes, impotence and cerebral vascular accidents. These will receive brief consideration.

Diabetic Coma

THE clinical picture of diabetic coma and acidosis are well known: marked asthenia, rapid strong breathing without

any evidences of cardiac failure; soft eyeballs; hyperglycemia, acetone and diacetic acid in the urine and a low CO_2 plasma combining power. The differentiation from other causes of coma is as a rule not difficult. It is perhaps of interest to stress that a moderate hyperglycemia is occasionally observed following cranial trauma and I have known such cases treated in accident wards for diabetic coma when there was no history of trauma and no external evidences of injury.

Psychotic Reactions

IT is well known that in uncontrolled cases of diabetes one frequently observes mental dulness, mild behavior disorders, irritability and a variety of neurotic manifestations. It is my impression, however, that diabetes mellitus is never the cause of any frank psychotic episodes. Psychoses are not any more frequent in the diabetic than in the non-diabetic and the types of psychoses occurring in diabetes do not differ from those occurring in the non-diabetic. The type of psychosis frequently depends upon the prepsychotic personality make-up and upon precipitating causes but, unlike cardiac psychosis (6), the precipitating causes are not related to the coexisting diabetes. It is my impression that cerebral arteriosclerotic and senile dementia do not occur with greater frequency in the diabetic than in the non-diabetic and that the affective psychoses, including involutional melancholia, occur less frequently. It is suggested that the diabetic regimen may even act as a safeguard against the occurrence of involution types of reaction.

I have observed *bromide intoxications* in a number of diabetics. This occurred in psychoneurotic individuals but especially in cases with associated arterial hypertension. In the latter group the patients were on a salt poor diet and even moderate doses of bromides over long periods caused memory defects, disorientation, mild delirium, somnolence, motor incoordination, dysarthria and partial ptosis. The blood bromide values ranged from 150 mg. to 400 mg. per 100 c.c. Administration of sodium

chloride intravenously and/or by mouth usually resulted in recovery.

Diabetic Neuritis

THIS is by far the most frequent and most important neurological complication of diabetes. In spite of many advances in the etiology and treatment of diabetes, diabetic neuritis remains a difficult therapeutic problem. Neuritis involves the nerves of the extremities and less frequently the cranial nerves.

Pathology and Etiology. The *pathological anatomy* of diabetic neuritis is not clearly understood. Most authors [Woltman and Wilder (7), Pryce (8), Rimbaud (9) and others] have come to the conclusion that the essential pathology consists of patchy areas of degeneration more marked distally and associated with thickening of the walls of the nutrient vessels and that, therefore, arteriosclerosis of the nutrient vessels of the nerves and the ischemia resulting therefrom probably play a leading part in the production of diabetic neuritis. The frequent occurrence of retinitis with diabetic neuritis supports this theory, but the absence of neuritis in other diseases where arteriosclerosis is common weakens this hypothesis. Jordan, Randall and Bloor (10) found a diminution of lipid constituents in excised nerves of diabetic patients as compared with those of non-diabetics. These findings were not constant but generally corresponded to associated vascular changes.

In some cases focal infections undoubtedly play an etiologic role and, in others, deficiency states, especially vitamin B₁ deficiency, may be contributing factors. It is stated that modified insulin may cause neuritic pains and it is generally agreed that the blood level has little influence on the pain of the diabetic.

Clinical Manifestations and Diagnosis. Neuritis of the nerves of the extremities occurs more commonly in the older diabetic but may occur in the young. I have seen several patients in whom neuritic pain was the earliest subjective complaint which led to the diagnosis of diabetes.

Pain is the most frequent symptom. Woltman and Wilder (7) found peri-

pheral pain in 10 per cent of 2000 consecutive cases of diabetes. The pain is usually in the lower limbs and may be mild or severe. The pain may disappear spontaneously and later reappear as in *tabes dorsalis*. Severe pain usually does not last more than a few months but may last for years. Jordan (11), in an analysis of 47 cases, found the average duration of the pain, after starting treatment, 8 months. Tenderness of the nerve trunks is observed in cases with severe pain. As in alcoholic neuritis, the pain is often worse at night.

The frequency of the other findings is illustrated by the statistical study of 2000 cases by Woltman and Wilder (7). In 33 cases anesthesia was reported, in 92 paresthesia, and in 66 the patients complained of numbness of the feet. In the same series there were 29 cases of muscle weakness, mostly in the peroneal group. Woltman (12) ascribes it to pressure caused by crossing of the legs. Ten cases had *mal perforant*. Jordan (11), in a study of 463 diabetics, found diminished or absent reflexes in 45.3 per cent of cases. Paralysis of the bladder with retention of urine, in the absence of diabetic pseudotabes, is rare. Jordan and Crabtree (13) report seven cases and stress the unfavorable prognosis.

Diabetic neuritis of the lower extremities should be differentiated from the pain caused by dehydration and peripheral arteriosclerosis, from neurosyphilis, especially *tabes*, pernicious anemia, spinal cord tumors, protrusion of intervertebral disks and rarer neurological conditions. Diabetic neuritis of the upper extremities is rare and should be differentiated from the more common *periartthritis* (*bursitis*), neurocirculatory syndrome of the scalenus anticus muscle, spinal cord tumors and intrathoracic disease.

Treatment of diabetic neuritis of extremities. This is often unsatisfactory. In general the control of the diabetes, abstinence from alcohol, removal of definite foci of infection, correction of deficiency states, especially vitamin B₁ deficiency, rest, heat, Buerger's exercises and other forms of physical therapy and sedatives are the

requisites. Opiates should be avoided because of the danger of drug addiction. Common sense psychotherapy is always of definite benefit.

From the standpoint of treatment and prognosis Jordan (10), in a study of 226 cases with neuritic manifestations of diabetes mellitus, offers a classification which is useful for therapeutic purposes:

(1) *Hyperglycemic type.* This type, of which there were 34 cases, was characterized by presence of pain, absence of objective neurologic abnormalities, and the existence of uncontrolled diabetes. Satisfactory results were obtained when the patients were placed on a diabetic regimen.

(2) *Circulatory Type.* This type, of which there were 29 cases, was characterized by pain, cramps, paresthesia, hyporeflexia, intermittent claudication and impairment of circulation. This type is refractory to treatment which includes the whole gamut of the above-mentioned procedures.

(3) *Degenerative Type.* This type, of which there were 45 cases, is characterized by little pain or paresthesia but by marked reflex changes and other objective abnormalities. The treatment is the same as in group (2).

(4) *True neuritic type.* This type, of which there were 120 cases, is characterized by sensory and motor abnormalities and reflex abnormalities. In addition some of the cases had systemic reactions such as fever and leukocytosis, involvement of the cranial nerves, retention of urine and increase in spinal fluid proteins. Jordan states that with persistent and diligent treatment these cases respond to treatment although some of them resist improvement for many months.

Recently two additions have been suggested in the treatment of diabetic neuritis. Theobromine 15 grains with an equal amount of sodium bicarbonate 4 times daily [Wilder (14)] and sodium chloride 30 grams daily (15). Sodium chloride is lauded in the circulatory type of diabetic neuritis.

Cranial Nerve Involvement. Optic nerve changes are frequently seen in uncontrolled

diabetes. *Pupillary changes* are not common although Joslin (16) reports such changes in 20 out of 120 cases. In 5 of these cases the pupils are reported as being of the true Argyll Robertson type in non-luetic individuals.

The extra-ocular muscles are rather frequently involved. Collier (17) reported 30 cases of oculomotor paralysis and stressed the importance of ruling out diabetes in all cases of ocular palsy. The abducens nerve is more commonly affected than the oculomotor and the trochlear involvement is rather rare. Most cases of extra-ocular palsy make a good recovery. Facial palsy (Bell's palsy) occurs not infrequently. Other cranial nerve affections are rare.

Diabetic Pseudotabes

THIS is a rare condition characterized by the cardinal signs of tabes in the absence of syphilis: pupillary changes, absence of tendon reflexes, bladder disturbances, loss of deep sensation and hypotonia. In the few cases that came to autopsy, changes were found in the posterior columns, posterior roots and peripheral nerves. Jordan (18) reports 7 cases. I have observed 2 cases, both in young individuals, in neither of whom pain was a marked manifestation.

Impotence

IT is generally known that impotence is a common occurrence in uncontrolled diabetes. I have seen several cases in whom diabetes in middle age was an early manifestation of diabetes mellitus. In a recent case, a man aged 42, there was impotence for several years prior to the development of other subjective evidences of hyperglycemia.

Cerebral Vascular Accidents. Wilder (14) believes that cerebral thrombosis and hemorrhage are not any more common in the diabetic than non-diabetic. He believes that the prognosis is better in the diabetic than non-diabetic. He calls attention to the fact that Jordan and Watters (19) have advised against lowering the blood sugar too suddenly or to too great an extent.

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1832 SPRUCE STREET



Color Marking for Anesthetic Gas Cylinders

THE recently proposed Simplified Practice Recommendation on Color Marking for Anesthetic Gas Cylinders has been accorded the required degree of acceptance by those interested, and has been approved for promulgation, according to an announcement of the Division of Simplified Practice, National Bureau of Standards. The recommendation will be identified as Simplified Practice Recommendation R176-41.

This recommendation originated with the American Society of Anesthetists, and the Committee on Simplification and Standardization of Hospital Furnishings, Supplies and Equipment of the American Hospital Association, and has undergone some modification at the suggestion of the Medical Gases Committee of the Compressed Gas Manufacturers Association and

others. Color marking is provided for 6 medical gases and two mixtures commonly used for anesthesia.

The color markings are recommended to be applied to the shoulders of containers so as to be clearly visible from above, and apply only to small cylinders used on anesthesia machines.

The proposal is based on studies by the American Society of Anesthetists of the possible hazards incident to the use of a growing variety of anesthetic gases, and it is their opinion that some of the hazards will be obviated by insuring in every possible way against accidental confusion as to the kinds of gases being handled at any given time.

Pending printing, mimeographed copies of this Simplified Practice Recommendation may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

COMMENTS ON *Personality*, UNCONDITIONING AND FRUSTRATION

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THE present communication will attempt to correlate some of the current psychological concepts with the psycho-immunological hypothesis and to clarify them. The problem embodies, of necessity, a complex of details into which is incorporated a mass of loosely-connected facts, gleaned from such sources as the laboratory and from various clinical observations. It is many times a difficult task for the clinician to determine what is and what is not abnormal in regard to human behavior. The problem becomes decidedly more complex when the investigator attempts to comprehend the nature of the many forces and their accompanying variables which control such behavior. Much might be accomplished if a suggestion were forthcoming as to a possible workable basic principle which could serve as a biological basis for the study of human behavior.

The author's concepts have aided some

of those who have attempted to comprehend the details of the psycho-immunological theory (1). It is with this instrument that I wish to discuss some problems which confront those who are engaged in work of a psychological nature.

THORPE (2) states that a substantial account of character and personality must take serious cognizance of the innate factors in personality. He adds that it is important to consider such factors as biological heredity and also social inheritance.

Biological heredity can be thought of as the intrinsic make-up of an individual. It is the actual "stuff" which makes up the individual; it is the inherent nature of the tissues and the organs. Scientific evidence points repeatedly to the fact that tissues of one individual apparently are different from those of another. Certainly the resistance of one individual's tissues to disease is different from that of another. The result of previous infection is also an important factor, since immunity, or the ability to combat disease, is dependent in some part upon the products which the body has manufactured as a result of having had a disease previously.

There seems to be evidence that the in-

From the Appleton Clinic
The author's terms of "psycho-allergy" and "psycho-allergen" have been accepted and appear in the recent edition of the American Illustrated Medical Dictionary, edited by Dr. W. A. N. Dorland. Since much confusion has arisen over the above terminology, because of the fact that some readers have associated "allergy" with proteid material, I wish to call attention to the fact that immunological reactions of a proteid nature are properly termed "anaphylactic." In order better to incorporate in my hypothesis the concept of all noxious stimuli, I have preferred, of late, the term "immunological," which can, in a major portion of cases, be adequately interchanged with the term "allergic."

trinsic nature of tissues differs in various individuals, for some develop a cancer, while others appear to be more or less resistant to that disease. As Thorpe (2) puts it, the old controversy of "nature vs. nurture" comes into prominence since it is most difficult to evaluate the effect of each and every factor upon the individual.

Thorpe (3) speaks of social inheritance. In my opinion this term represents a sum total of environmental factors, past and present, which have exercised their influence upon biological heredity, or it may be due to the very nature of the intrinsic parts of the organism which have been inherited.

In other words, these environmental factors have sensitized, taught, or conditioned the individual, in that they have rendered him different from what he was previously, before coming in contact with such factors, which continually surround him and exert their influence upon his perceptual apparatus.

Social intelligence has been referred to as one's diplomacy in human relations, or the ability to influence others in favor of desirable goals, according to Thorpe. Immunologically, this can be stated as the ability to sensitize others. This has something to do with the ability to refrain from "rubbing others the wrong way," which is, in my opinion, the ability to keep from hypersensitizing another individual by exerting too great a stimulation upon the observer's afferent system and the recipient's cortical perceptual cells.

THORNDIKE (4) has formulated a theory, with good evidence, that the association areas of the brain are probably the seat of mental processes by which "new patterns are formed from among the data of experience." He feels that intelligence is contingent upon the modifiability of the nervous system with special reference to readiness for connection making at the synapse. Connections, *per se*, do occur from an anatomical point of view. There is no doubt that they have been demonstrated many times to the satisfaction of some investigators. However, their physiology is a point which is in question, and that has to do with the main problem con-

fronting us. Do they serve as factors of prime importance, that is, do they store knowledge, or do they function as mere connections between the areas of the brain which have been sensitized by previous learning stimuli in the form of previous neural impulses which have left their mark on the cortex?

If they are of a nature referred to in the latter category, they serve merely as connecting fibers or switch tracks between the main lines which have to do with the powers of perception in the final dumping over of the nervous impulse into the cortical cells and thence into the efferent tracts which give rise to motor action.

Thorpe (5) reasoned that after the mastery of motor learnings has been accomplished, the cortex of the brain, at least, is not concerned in the retention of such modifications as have been registered by experience. Thorpe's opinion is that the theory of brain localization does not have much ground upon which to stand.

PAPEZ (6) has written that "on the basis of morphological, experimental and clinical data we are disposed to believe that there are three main streams of physiological potentials which reach the cerebral cortex. The first is a stream of diverse and specific sensory excitations which underlies the general stream of perceiving. The second is a stream of excitations of a more global nature passing to the corpus striatum and to the frontal lobe, which underlies the focalizing and orientative processes. The third is a stream of excitations which passes through the pars ventralis thalami to the hypothalamus and thence to the gyrus cinguli. . . . In the cortex these three streams are probably united into a common process of varying composition."

In the same article Papez wrote, "It has been pointed out that the three receptive regions of the cortex, the posterior or sensory areas, the frontal lobe, and the gyrus cinguli, may be the recipients of three differently organized excitation streams which normally irradiate these regions of the cortex. It is also to be noted that these regions surround the motor and premotor areas which are located in their

midst. If we construe these three incoming streams as representing the sensory, the global, and the emotive processes, it becomes evident that these must be combined in the cortex to yield integral psychological products. This is implied in the concept of mass action in cerebral functions. That the cerebrum acts as a whole is a doctrine which does not repudiate the systematic and orderly organization of afferent and efferent impulses, but lays great emphasis on their central organization."

IT is this "central organization" which seems to be the important area for our consideration of this matter, for it is here in the cortical areas that so many psychologists seem to meet with an impasse in their theoretical discussions. What have these cortical cells to do with incoming neural impulses from the receptor tracts? Do they merely receive the stimuli and send them forth without entering into the reaction? Is the setup of perceiving a new stimulus merely another new reflex arc among the other learned reflex arcs which some investigators advocate? There seems to be too much evidence to the contrary, for the act of perceiving, even for the first time, does seem to change the cortical potentials in some manner so that they react differently to any other stimuli of a like nature, should such stimuli follow. We call this recognition, in that the cortical cells have *learned* to recognize a stimulation through the actual experience of having perceived it previously. When a child sees a new object for the first time, or when he hears a new sound for the first time, those cortical cells which pick up the neural impulses apparently undergo some immediate change *as a result of having perceived that particular set of neural excitations*. When the same child sees the same object or hears the same sounds for a second time, they are not new to him. In other words, he has learned from the past experience of such a perceptory nature. His power of recognition, of course, is dependent upon his own power of remembrance, which, in psycho-immunological parlance, is the inherent ability of his cortical cells

to hold the change which has come about in the receipt of this set of primary neural stimulations. If the identical object or the identical musical note is repeated enough, these cortical cells are further changed by sensitization, and he acquires an added power further to recognize these specific perceptory stimulations.

Such an observation has been noted by almost everyone. If a stimulus is repeated several times, the power of remembrance becomes enhanced markedly. This is because the cortical cells have received an additional amount of the perceptual stimuli in order to change and hold these sensations more satisfactorily in such cells.

BUT if these very same stimulations are repeated continually, the subject becomes restless, finally worried, and may react emotionally. What has happened is that these cortical cells have been saturated by the incoming stimuli, oversensitized, if you prefer, and have dumped the surcharge into the subcortical or thalamic areas (emotional centers) to be drained through the autonomic nervous system in a manner much as a safety valve functions.

Let me illustrate the above point. If an individual's head is shaved and water is allowed to drop slowly on it, no particular reaction will follow, provided of course that such a set of neural perceptory stimuli (through the sense of touch) is but temporary. But allow such stimulations to progress for a long duration of time, and the subject may begin to show abnormal mental symptoms. Such was the method of creating "insanity" during the Spanish Inquisition. The individual's cortical cells have been hypersensitized to the excess stimulations produced by the continual dropping of water. A similar reaction can be produced through sound perception, but, of course, a different cortical area will become hypersensitized to the repeated sound stimuli which surcharge the temporal cells.

Let us consider Lashley's monumental work (7), of removing selected parts of an animal's brain after the animal has learned how to run a maze and escape from a puzzle box. When the frontal

lobe was removed by Lashley, it was observed that the more recent and less thoroughly neuromuscular skills were lost, but the older and more habitual learnings remained.

From this observation it was thought that the extirpated cortical area must have been concerned in the learning of the neural skills, since these skills were lost as a result of the operation; the older and more thorough learnings survived the operation.

Now, in regard to intelligence, Terman (8) has emphasized that it is the ability to think in terms of abstract ideas. He has revised the Simon-Binet test, which is generally acknowledged as being a reliable test for intelligence. However, such tests serve only, in my opinion, to bring out the ability of the subject who is being tested to react to that with which he has previously been sensitized.

Buckingham (9) defines intelligence as the ability to learn. However, this author does not state definitely just how one learns. One can add that learning is the ability to become sensitized to afferent stimuli. Hence the educational view of intelligence, along with the biological classification, is measured not alone by the ability to adapt oneself to one's environment but also to profit from these previous sensitizing reactions.

GRANTED that such a process as conditioning may actually take place in the brain, in that one can produce a controlled response to a known stimulus, the question remains, what specific biological mechanisms does such a process invoke? Perhaps the synaptic gaps control the pathways over which the nervous impulses may travel, and again, this might not be the answer.

Given the same type of stimulus, one should obtain the same type of response, when such a stimulus is repeated many times. However, this is not the case. Continual repetition of associated stimuli seems to alter the response; this has been checked clinically.

It seems peculiar to state that one is able to uncondition a person with respect

to something to which he has been conditioned previously. It is very much like the prestidigitator who says "Now you see it, and now you don't".

This so-called process of "unconditioning" was introduced by the Watsonian school as a method of breaking an undesirable habit, in that this procedure was introduced for the elimination of certain habitual responses.

The mechanism upon which this method depended was to develop, through learning, a new reaction which was antagonistic to the bad habit. In other words, in order to break a habit, the development of a new habit was required to inhibit the bad trait. If the new reaction inhibited the old response effectively and permanently, the process of reconditioning was said to have taken place.

The importance of strong and enduring motivations was stressed throughout the procedure, since one could not expect to break a long established habit unless one really wished to do so. Moreover, many of the habits had to do with undesirable thoughts or ideas.

GUTHRIE (10) has named four methods which he introduced in this process of unconditioning. I shall mention these four methods, and at the same time shall attempt to re-evaluate these processes, which Guthrie described, from the viewpoint of my theory through the psycho-immunological approach.

Method 1—Incompatible Response Method

The first method was the "*incompatible response*" in that the bad habit was eliminated by "the action of incompatible responses". Here a new reaction had to be established which was antagonistic to the habitual response. The reaction was conditioned to stimuli that also conditioned the habit, and which were strong enough to inhibit the habit when the cortical stimuli were present. The nature and the actual production of the new inhibiting response was the chief concern and the subject of careful planning from the very beginning of the work, according to Guthrie.

Crafts (11) states that such an illustra-

tion is exemplified in the old advertising slogan "Reach for a Lucky instead of a sweet".

This method has been employed by many psychiatrists to encourage their patients to believe that they can overcome a bad habit. It operates through suggestion (auditory tract).

Crafts (12) states that the psychiatrist, in his behavior and especially with his actual words of explanation and encouragement, becomes a stimulus for more favorable reactions on the part of the patient. Nevertheless, in the attempt to overcome deep-seated habits, difficulties arise and, as Guthrie (13) has pointed out, one cause for the difficulty seems to come about in an attempt to eliminate an undesirable habit, in that one encounters various numbers and varieties of the same stimuli which caused the habit. Thus, any associated situation, which acts in some form or other as a stimulus for the production of the habit, will tend to recall that same habit to the individual. According to the immunological concept, these many stimuli, which bombard the individual, may well act as irritants which set off the previously experienced psycho-immunological response which the patient has experienced many times previously.

IF a patient has created the habit of excessive drinking, the mere mention of liquor in any form, the sight of the material, or any incident which was previously connected with the subject's experience, may bring about the desire to return to the habit.

This same phenomenon is observed in the allergic field, for certain groups of irritants or allergens can be classified into various categories in that they resemble each other in certain specific characteristics.

The hypersensitization of an individual to any one of a group of allergens might render him also susceptible to irritation which can be produced by another related group.

For example, a patient became markedly hypersensitive to dog dander, and when dogs were in her presence she displayed

marked allergic manifestations in the form of asthmatic attacks. The patient also suffered like attacks when cats came near her, although cat dander itself was not the primary cause of her allergic state. This same patient experienced difficulty when she entered a neighbor's house in which a canary was kept as a pet, although she was not aware of this fact, for she did not see that the bird was present. She developed an immediate attack of asthma and was forced to leave the house. It was not until a later date that she learned of the canary's presence in the house.

It should be mentioned that this was not the result of imagination; it was the dust itself from the canary feathers which was the direct cause of her asthmatic attack; although it is well-known clinically that even the mere sight of an allergen, to which the patient is allergic, may produce such an attack.

Thus, even the sight of roses, as noted in a picture, may bring about an asthmatic attack in one who is allergic to roses. Here the perceptual apparatus, through the optic tracts, delivers the nervous impulse to the cerebral centers which have been rendered hypersensitive previously to such an agent.

The sensitizing dose of allergen has made the individual susceptible to it, and another dose of the same agent may act then as the provocative dose, in that this second dose acts as the precipitating factor in bringing about the actual attack.

This process can be likened to a football team which, when tired by a strenuous game one day, meets a strong team the next week and suffers a decided defeat, due to injuries and the lack of reserve which has come about because of the difficult first game. Prize fighters speak of this reaction as "softening" an opponent. The individual has not had the opportunity to recuperate from the injuries sustained in order to weather another series of blows from the second opponent.

Method 2—Exhaustion Method

GUTHRIE contends that an undesirable response might be broken by intensive continuous repetitions of the response it-

self, so that when a response is exhausted, the usual stimuli no longer arouse it.

Guthrie exemplifies this method in the form of "horse-breaking" as practiced by Westerners. The horse is roped, thrown, and blindfolded; a heavy saddle is then placed on the animal's back. The rider mounts the horse, removes the blindfold, and a struggle ensues between the rider and horse as to which will win. If the rider can remain on the horse, the animal will sooner or later become exhausted. In this manner, the rider can teach the horse to serve his purpose. Hence, new reactions have been produced by such a procedure, since the horse has now become used to the saddle, the rider, and the pressure of the bit against his mouth. The response is different now than it was before the horse was conditioned to these new stimulations.

Method 3—Toleration Method

THE third method which Guthrie introduces is that of breaking a habit by slowly increasing the toleration of the stimuli for the undesired reaction. This consists of presenting the stimulus for the habit at an intensity so slight that the undesired response is at the most only very weakly aroused. At a later time the strength of the stimulus is increased gradually; the strength of the stimulus is never increased rapidly, since it might bring about an undesired response.

Guthrie exemplifies this form of habit breaking, by his toleration method, in the following way.

The United States Army employs the method for breaking horses in a manner different from the western method described previously, since the horse learns to tolerate a saddle upon his back by submitting to the feel of a light blanket laid upon him, then a heavier burden, and so on, until he is gradually accustomed to all of the stimuli which he will have to perceive, little by little.

Method 4—Change of Environment Method

THE fourth method which Guthrie describes, change of environment, is to remove the stimuli which causes the

undesired habit. Given the presence of no stimuli, the undesired habit would not present itself. If one eliminates the cause of a fear, the fear will not present itself. However, it is obvious that one cannot remove all stimuli which produce undesired habits, since there is no control over these stimuli. The next best thing to do, then, is to remove the individual from the irritating environment. This is the method which is commonly used by physicians to rid their patients of an undesirable environment, as the emotions so aroused by an unhappy situation may prove damaging to the wellbeing of the patient. For that reason, patients are directed to enter sanatoria, or to go for visits to new places, in order to rid them of obnoxious afferent stimuli which were present in their usual environment.

WE have presented the four methods of Guthrie which are employed in breaking undesirable habits. Let us discuss further each method from the viewpoint of the immunological hypothesis, since the entire picture forms a small part of the whole panorama of stimuli and their effects, good or bad, upon the individual. This, by the way, may serve as cause for further formation of personality changes.

In considering the action of incompatible response, the advertising slogan was mentioned, which was "Reach for a Lucky instead of a sweet." This response to a new stimulus took the place of the undesirable habit which was aroused by the environment. The behaviorists would argue that a conditioned response had taken place to form the undesirable habit since the individual is confronted by a stimulus which has formed a habit, and thus the presence of that stimulus automatically brings about the response.

According to our hypothesis, the individual has become sensitized to his environment. The afferent stimuli of the surroundings have sensitized the individual, and his response is dependent mainly upon his past experience in the form of previous sensitizations, so that when one attempts to break a habit by the action of incompatible responses, he is

really introducing a new habit, or, in other words, a new physiological change which takes the place of the old one. The individual has more of an emotional reaction to the new set of afferent stimuli which are now introduced.

A person, who observes a friend in the act of smoking, many times may reach for a cigarette; thus we see evidence of the "spread," in that any part of a pattern, which a person observes, causes the person to respond with his regular habit formation. For example, the act of smoking does bring about the conditioning of the individual, or, if you will, a sensitizing process in the cortical cells to the afferent stimuli which are produced in the actual perception of the act; hence the introduction of any one of these afferent stimuli at any other time will recall the immunological reaction of smoking.

THE second method, that of exhaustion of the undesirable response to intense continued repetition of it, is explained psycho-immunologically by introducing afferent stimuli until the cortical cells become "saturated." The efferent discharge does not take place since the cortical cells are stopped, at least temporarily, by the saturation process of the many afferent stimuli which bombard it. It is very much like witnessing a person with an asthmatic attack which was caused by inhaling ragweed pollen. The body cells are temporarily blocked when the physician injects morphine, and the sensory apparatus is not able to perceive or register the irritating agent.

THE toleration method, that of slowly increasing the toleration for the stimuli which caused undesired reactions, may be explained readily by means of the psycho-allergic mechanism, since desensitization can be effected clinically, at least, by slowly raising the tolerance of the patient to the allergen which causes the allergic reaction.

We have an exact parallel in Guthrie's toleration method for breaking an undesirable habit. Let us assume that ragweed again has produced an allergic reaction in the form of an attack of hay fever. The

physician uses the pollen which caused the hay fever to desensitize the individual, but he does so by very slowly increasing the doses of the allergen to which the individual is susceptible, until he no longer reacts to the irritating agent.

Psychoanalysis, in our opinion, employs the same procedure, since painful situations are recalled by the auditory and visual tracts of the patient, through the analyst, and, by this recall method, which operates over a long period of time, the patient becomes desensitized to the situation which caused his mental upset.

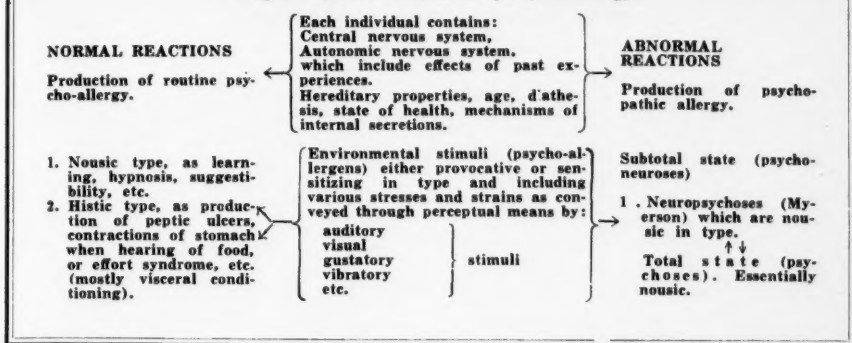
However, if this process is speeded up, the patient will not have had built up a tolerance for the psycho-allergen, and a marked exacerbation may result through the introduction of too great a dose of the psycho-allergen. This is noted clinically in the desensitization of some people to their allergens, for if the allergen is not introduced slowly enough, a marked allergic response is thus set off, and the dose of the allergen must be reduced for some time, then again increased slowly over a period of time until the person's tolerance is established.

GUTHRIE'S fourth method, that of changing the environment in order to break habit, can be accomplished in two ways:

1. Remove the noxious stimuli, or
2. Remove the patient from the noxious environment.

Obviously, the first method has only a limited application, since one cannot rearrange a social set-up with a wave of the hand. It is much easier to transfer the patient to a new environment. This is what is attempted many times when, for some reason or other, active desensitization cannot be used clinically. The allergist removes the patient from the environment. In other words, he removes the individual from an environment loaded, say, with ragweed or any other allergic agents which may be present. The patient is advised to go to an environment where ragweed does not exist, for instance at the oceanside, or in the mountains. The same thing is noted when a person becomes psycho-allergic to

Diagram of the Mechanisms of Psycho-allergy



the psycho-allergens which bombard his afferent systems, and which have caused his cortical cells to become hypersusceptible to the incoming afferent stimuli. Thus, the psychiatrist suggests that the patient leave an environment which has produced a frustration, a phobia, or other abnormal symptoms of behavior.

THUS we see that the stimulus-response idea can be applied to the immunological hypothesis and can be backed by many available clinical examples.

Watson records unconditioning processes of viscera retraining in which visceral experience must of necessity play a prominent role if tangible results are to be secured, and in view of the fact that the unconditioning of a previously conditioned fear spreads to all objects of a nature similar to the fear object eliminated, the psychologist believes that he has opened up a portentous avenue of possibility for the reconstruction of aberrated personalities.

However, Thorpe (page 270) criticizes Watson's work. First, Watson's assumption, that all fears other than those evoked by loss of support and startling sounds appearing in the life of a child must have been conditioned by chance or obvious double stimulus events, is decidedly open to question.

Since our approach is from a purely biological viewpoint, and since no teleo-

logical concept should enter into its formation, I shall not introduce any discussions which concern mind, consciousness, and other principles in the attempt to explain the problem of frustration.

SINCE it would be most difficult to produce a satisfactory and complete discussion of this vast subject in such a short space, and at the same time incorporate the immunological approach, I shall take the liberty to present a working classification for three purposes:

1. An original classification should be one which can be applied to theory.
2. The classification should be one which can have clinical application.
3. It should not be too complicated.

Before this presentation is begun, one must take into cognizance the fact that much highly significant work has been done by many investigators.

Some believe that the Kraepelinian classification is a bit outdated, and the ramifications of Freudianism are rather unwieldy and are a further elucidation of symptoms and not a study of the actual etiological factors involved; it shall be my attempt to introduce a physiological classification which will follow the three points previously stated.

Since I have reviewed previously the major properties of cellular substance from a physiological and an anatomical point of

view, an endeavor should be made to make such a classification primarily one of function. The classification, which is made up of pathological or anatomical properties, may be rather misleading to a clinician, who is interested primarily in the ability of his patient to function properly.

We see from this presentation that the stimuli, or, better still, psycho-allergens, which bombard the cortical cells are dependent for their effects upon their size, amplitude, and the length of time during which they are allowed to operate. Here the problem of threshold and tolerance is encountered. Our physiological knowledge at this time is not sufficient to settle this topic in a satisfactory manner. Whether the changes in the cortical cells will be of normal scope or abnormal in nature, as a result of these environmental stimuli, will be dependent upon the nature of the centers which receive the stimuli. In other words, of added importance is the caliber of the stimuli themselves; this ability of the cortical centers to interpret and store the results of afferent stimulation is directly dependent upon the physiological properties of the tissues involved.

The nature of the blood supply, the individual's threshold, the chronaxie of the nervous tissue, are some of the factors which must be considered.

IF a normal reaction occurs, it is of two types; the "nousic" or the "histic" phases. The former has to do with the storing of knowledge, which is intellectual in nature. It is central in type, or cortical, and seems to be essentially a result of the process of cerebral physiology itself.

On the other hand, the histic type of reaction to learning, as the name implies, has to do with functioning of organs and tissues. Excessive learning may bring about the production of a rapid heart, the phenomenon of sighing, pylorospasm, or the production of pain in various parts of the body, through the production of local tissue anoxemia. This histic manifestation of symptoms is what the behaviorists would call the evidence of a conditioning process. Such a concept seems to be perfectly permissible from the facts of the case.

The histic type of reaction differs somewhat from the nousic type in that we have evidence of the implication of the autonomic apparatus to a great extent. Because of the incorporation of the autonomic nervous system, which receives the "spilling over" of the nervous impulses coming from the cortical cells, there are marked contractions which result in peristalsis. Besides, other muscular functionings are observed, which are well known clinically. Excessive reactions of the histic type produce spasms which may give rise to an oxygen-want in the metabolism of muscle cells supplied by the various components of the autonomic nervous system.

When one considers the abnormal reactions, as noted in our classification, it is well to emphasize the fact that such reactions may be brought about by the lowering of the threshold to afferent stimuli in the cortical cells. In other words, the immunological reactions have been called into play by the body, and the reactions noted may become pathologically significant.

The subtotal state is composed of two divisions:

1. The Neuropsychoses, which are essentially upsets in intellectual behavior.
2. The Neuroses, which are histic, so far as their symptomatology is concerned.

A NEUROTIC may complain of his heart, intestinal cramps, nervousness, quivering, sweating, difficulty in breathing, headache, diarrhea, constipation, etc. These symptoms are essentially histic in nature.

If the reaction carries on, the patient may arrive at the total state, which, in standard nomenclature, is the production of the psychoses. This disorder is essentially nousic in type, in that it is a disorder of the intellectual system. However, there can be a variance from one state to the other, as has been mentioned previously by Myerson.

It should be emphasized that the above classification is meant to picture the effect of psycho-allergens on the entire individual. It is a physiological upset which must continue for some time before pathophysi-

ological changes produce actual evidence of morbid anatomy.

In this portion of our discussion, we are interested primarily in the abnormal reactions; but one should not lose sight of the fact that a study of symptoms is not so important as a knowledge of the physiological mechanisms which are at fault.

The various disorders which are recognized clinically can be included in such a classification. However, for teaching purposes, it is better to make an original classification as simple as possible, with the knowledge that one can add other clinical syndromes as necessity dictates.

JUST a brief comment on the subjects of amentia and genius might clarify my concept of these two conditions. From the psycho-immunological point of view, a person who suffers from amentia probably has one or more cortical areas involved, in that these areas do not have the ability to receive, store, or react to future stimuli which normally would provoke a response in a normal individual. Such a disorder can be either peripheral or central in location.

Thus, word-blindness (cortical) can be thought of as inability to hold the effects of the perceptive sensations on the proper cells, so that the individual, being unable to hold them, is not able to recognize further sensitizations which arrive at the particular involved and deficient cortical centers. Such a case was published recently (14). In other words, word-blindness is a partial form of amentia, although, as I have stated before, the disorder can be caused by two types of pathology: peripheral and central (15).

My concept of a genius is an individual who possesses exceptional ability to perceive, record and store these incoming perceptive stimuli to a much greater degree than can a normal person. A genius may possess an aptitude in more than one perceptive field, in that his ability may be connected with auditory and visual super-perceptive prowess, or with other marked perceptive powers. He is able to store and use a far greater amount of sensitizations and their effects in the form of knowledge,

or his recording centers can be supercharged by that which he sees, hears, etc., depending upon his particular aptitude. Furthermore, as he accumulates this supercharged information in his cortical cells, he is able to release it through the proper channels and at the proper time. There may be a direct relationship between this ability to supercharge the cortical centers and the possibility of overcharging them. In such a case, abnormal behavior may ensue. Herein may be the reason why some geniuses are emotionally unstable, since the space between the saturation point of this supercharging process and that of over-saturation may be small, indeed.

IN passing, it is well to mention that other competent observers have recorded previously their concepts of such processes in terms similar to those which I have employed. Of particular interest, on this topic, are those as expressed by Władyczko (16) under his concept of "psycho-anaphylaxis", which, poor term as it is, does state his impression of the mechanism of the psychic processes. This clinician calls attention to the fact that some people fall in love at first sight, while others hate certain persons right after they have met them for the first time.

In my opinion, the reaction of "love at first sight" has been built up previously in such persons, since this state of affection appears to be connected definitely with the resemblance of the person, possessing such an attraction, to perhaps the mother, father, or another individual with whom the amorous state has been associated previously. Likewise, the emotion of hate at first sight may have definite bonds of association in the resemblance to another acquaintance based upon previous sensitizations of a derogatory nature.

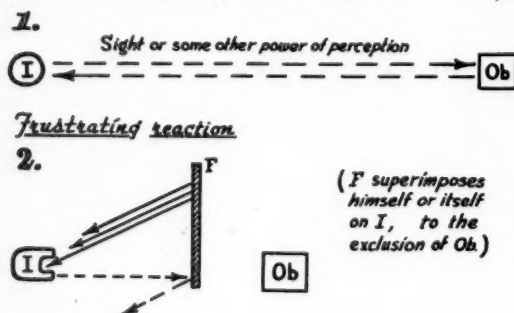
The observation of such associations is commonplace to nearly everyone. These associations are based upon the afferent stimuli (through the process of sight mostly) which have sensitized the recording centers in the process of perception. An individual actually learns what a certain person looks like. In this process of learning, various associations are attached

to it, since the overt behavior of the person being observed is also recorded along with the perceptions which arise in learning the physical characteristics of one's face, stature, et cetera. If these overt actions produce affectionate responses in the act of learning about the character of a person throughout the time such an individual is in contact with the learner, then the sight of another person, unknown to the patient, but who resembles the above person in question (the object of this learning process), produces a reaction usually similar to and heavily identified with the former reaction. If the previous contact was fear-producing, the reaction of seeing a person who resembles the individual who previously produced a fear reaction will often be identified with it.

Such reactions of learning can be identified many times with objects and not individuals. For example, a patient of mine received a letter which reminded him that he had overlooked the payment of his insurance premium and that he had but two days to pay it (17). A great deal of unpleasant emotion resulted in the worry lest he did not have time enough to arrange for such a payment. A few weeks later, a friend happened to mention the high cost of insurance premiums. The patient experienced a sudden emotional upset and he asked for a change of subject, in regard to the conversation, quite without forethought.

Mechanism of Frustration

BELOW is a schematic representation of the formation of a frustration. Since it has been shown that an individual be-



comes more suggestible after the formation of a neurosis, this is another way of stating that the individual has become more hypersensitive to perceptual stimuli, which are, in themselves, quite specific in nature.

I represents the individual.

Ob represents the object which the individual perceives.

F represents the intervening force or object, which I shall call the "frustrator" for lack of a better term.

Diagram of normal tropism of the individual to an object through perception, such as sight or audition, etc., in that F sensitized I by not allowing I's afferent pathways to act to Ob, since F now dominates I and hypersensitizes him through perception to the temporary elimination of Ob. We can speculate that a symptom of the sensitization of I may produce a PHOBIA, or a fear reaction, since I is overcome by the overstimulation from F. As this process continues, I becomes more frustrated or hypersensitized, and MANIC symptoms appear in that this process has damaged, at least temporarily, the mechanism which normally directs the efferent phase of behavior. The outward response is very much like a spasm, as is many times observed with an overt allergic response; this is exemplified by muscle spasm, as is noted in asthma (spasm of the musculature of the bronchial tree) and in such phenomena as sneezing, coughing violently, etc.

PERHAPS this viewpoint can be understood better by the citation of a clinical case or two of the mechanisms at work in the process of frustration. Mrs. H. B. was thirty-five years of age when she was brought to me. She exhibited marked schizophrenic symptoms, in that she heard voices and showed evidence of a split personality. In the course of my psychiatric study of her history, I obtained the information that she was deeply in love with a young man before she became the wife of another individual. Her first love had a profound effect upon her in that the

man, the center for her love, became refractory to her admiration. He showed no concern or even a passing interest in the patient. She married her present husband shortly after she learned that the first subject of her affections cared nothing about her. She has had six children. Since her husband is rather cruel to her, the first man has showed some concern over her mental condition. When she became aware of this, her symptoms became more marked, for now her husband is the frustrator in that he actually stands between the patient and her real love.

Perhaps the mechanism of identification can be demonstrated clearly by another case. Mrs. E. K. was a woman in her early twenties when her husband, a gambler, left her. She has had a most difficult struggle in providing for her children. Whenever she sees any individual who resembles her husband in any manner, she has an immediate aversion for the person, whether she knows him or not. She has become hypersensitized to the physical appearance and also the mannerisms of her former husband. This has become so marked that she feels terrified lest her children develop any traits of the former mate.

A PERSON or even an object can serve as a frustrator to an individual. For example, a child of nine underwent a series of weekly injections for secondary anemia during a period of time. Everything progressed smoothly until one day, without much forethought, I insisted that my young patient should have another injection of another drug for her condition. She objected strenuously to this added injection in the opposite arm. Now she dreads the thought of any injections, no matter how or when they are given to her. She has become hypersensitized to all hypodermics.

Mrs. J. S. has shown a marked phobia to

any object which anyone happens to leave in her home. She has developed a marked fear of money or articles of value. When these objects are in her presence, she cannot sleep, for she feels that she will steal them. If a maid has a bottle of medicine in her own room, my patient feels that she might go into the maid's room and drink the contents of the bottle.

The patient has been raised in an environment where she was kept from any responsibility whatsoever. She could not assert her own authority at any time, for her father would scold her if she tried to carry out her own will on any important matter. To make her situation worse, she married a domineering husband who refrained from giving her any authoritative rights in the home. As a result, she has become markedly hypersensitized to any article of importance, such as sealed letters, bonds, pocketbooks and the like. She could not touch them without experiencing a dreadful emotional feeling. But, after her husband had brought some of these articles to the office, and after she had been told to handle these, this fear began to subside. Furthermore, she was instructed to handle her maid's pocketbook and also the bottle of medicine. By means of this process of gradual desensitization, she began to overcome her phobias. She can now go to various shops and purchase her clothing and handle the money with which to pay for it.

This patient had been subjected to a frustration in her youth. The frustrator, her father, had hypersensitized her to certain objects, so that she developed a phobia. Her husband acted in a similarly frustratory manner, until she was freed of her hypersensitization by a gradual desensitization to those objects which had worried her previously. She was actually taught how to assert her authority in her daily dealings with others.

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—Concluded on page 124

THERAPEUTIC NOTES

A NEW REMEDY FOR TREATING HYPERACIDITY AND PEPTIC ULCER

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New York, N. Y.

THE consensus of opinion both published and unpublished is that the gastro-enterologist has not yet arrived at a pharmacological product or combination of products which will act on the gastric secretions to overcome hyperacidity, allay pain, and reduce pylorospasm.

Through the combined action of such a product the multiplicity of drug prescribing can be made simpler.

During the past few months a series of clinical experiments have been conducted in private practice and at the Metropolitan Hospital Gastro-enterological Clinic in order to ascertain the value of a new preparation, syntrogei.

The material under investigation is a capsule containing the following ingredients, furnished through the courtesy of Hoffmann-La Roche, Inc., Nutley, N. J.:

Aluminum hydroxide hi-gel gr. 5
*Phosphate salt of 3, diethylamino-2, 2-dimethyl-1-propanol di-tropic acid ester gr. 0.15
Bismuth subcarbonate gr. 2.5
Calcium carbonate (medicinal) gr. 2.5
Oil of peppermint gr. 0.375

Since these investigations were started the manufacturers of syntrogei have, through condensation of the material, reduced the size of the capsule one third and the amount of oil of peppermint to 0.075 grain.

* Accepted by Council on Pharmacy and Chemistry under trade name syntropan.

The specific properties and action of this capsule are: more complete acid radical adsorption; more prompt neutralization of excess acid, thus bringing the pH of the stomach contents closer to a neutral point; inhibition of spasm; relief of flatulence and inhibition of excessive secretion.

The capsule was designed to offer to the peptic ulcer and hyperacidity cases a more convenient form of medication. This is of special significance to the ambulatory patient.

The procedures were purely clinical and for the most part the results were based on the subjective changes produced under study.

A GROUP of 25 cases were studied which, though small in number, were more or less hand-picked. In other words care was exerted to choose the newer cases which had not been "through the mill" but where a diagnosis had been established based on history, physical examination, roentgenographic study and gastric analysis.

The cases were divided into:

1. Those with definite duodenal ulcers.
2. Simple hyperacidity with no demonstrable duodenal bulb irregularities.

MEDICAL TIMES, MARCH, 1941

The patients were placed on a modified Sippy diet and 2 capsules were administered with each meal and again at bedtime. The capsules were followed by 1 to 2 glasses of water. In all cases studied there was found to be some measure of relief afforded. This varied from patient to patient depending to a great extent on the nervous and stability factors. Whether this relief was greater than that found in the patients after administration of the liquid form of $\text{Al}(\text{OH})_3$ was doubtful. Peculiarly enough we were impressed by the evidence of a more definite alleviation of symptoms in the group which fell under hyperacidity. This may partially be explained by the fact that in these cases, in the absence of organic lesions, once the free HCl was adsorbed, symptoms would of necessity disappear until the formation of further amounts of HCl.

SOME few cases chosen at random and giving a history of having taken alkali which included the bicarbonates, the $\text{Al}(\text{OH})_3$ and magnesium trisilicate, were placed on the capsule under investigation. Results here were not marked by any greater degree of success than with the foregoing drugs. A graphic illustration of the results obtained follows:

Type	Immediate effect	Remote effect	Percentage improved
ulcer group	immediate relief	earlier return of pain	80%
hyperacidity group	immediate relief	more prolonged effect	100%
neurosis	not obtained	slight	5%

An interesting study was performed on a small group of patients of the hyperacidity and ulcer groups. They were given the cracker and water meal and a gastric analysis performed with the degree of free HCl recorded. (The entire gastric secretions were not titrated because we were interested only in determining whether or not adsorption of free acid took place to a reasonable degree.) One capsule was added to 10 cc. of filtered gastric contents again and allowed to stand for one-half hour. The free HCl was then estimated (titrated) and in all cases a reduction of at least 50 degrees was noticed. What significance this may have is difficult at

the present time to say, but the ability to lower the pH of the gastric secretion and the rate at which this was done is encouraging. That the aluminum hydroxide is the desired antacid is not to be questioned. The fact that it adsorbs acid without stimulating further gastric acid secretion is well known.

The insoluble calcium carbonate affords a more rapid neutralization of the acid. The bismuth subcarbonate is mildly astringent and antiseptic. The addition of these together with the oil of peppermint, to dispel flatulence, enhances to a slight degree the action of the capsule as a whole.

IN discussing the practicability of the capsule we must consider first its use in the ambulatory and chronic case in whom its value is more apt to be felt. The ease of administration and the fact that it can be carried wherever the patient goes is important. The size of the capsule (see footnote), which at the beginning of these studies was somewhat of a disadvantage with respect to swallowing, has been reduced one-third and is now readily swallowed by most patients.

An untoward sequela of the use of the capsule is a tendency toward constipation.

We are, however, familiar with this following the use of any preparation of aluminum hydroxide. Mineral oil or mild laxation is suggested as a remedy.

1. Aluminum hydroxide along with other antacids, an antispasmodic and a carminative is offered in capsule form as an addition to our present armamentarium in treating ulcer and hyperacidity cases.

2. The results are satisfactory.

3. The convenience to the patient is of definitely proven value.

4. These studies are being continued in the hope of being able to present more objective data at a future date.

101 EAST 116TH STREET.

CLINICAL NOTES

SEVERE SKIN REACTIONS RESULTING FROM THE ADMINISTRATION OF SULFAPYRIDINE: A Report of Three Cases of Exfoliative Dermatitis

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EIGHTY-SEVEN cases of gonorrheal urethritis in ambulant males were treated with sulfapyridine in the Genito-urinary Clinic of the Philadelphia General Hospital. The authors have in press a report of the results of this study. (1) Of this number of patients three developed severe toxic skin reactions to sulfapyridine.

It is common knowledge that sulfanilamide frequently causes severe toxic reactions of the skin. The literature on this subject was reviewed by Tedder [1939 (2)]. He divided the types of dermatitis into three distinct groups: 1. Photosensitization, 2. Drug sensitivity (allergic type), 3. Poor toleration (or saturation) with the drug.

Hallam [1939 (3)] was among the first to report a case of toxic dermatitis following the administration of sulfapyridine. Omens and Robbins [1939 (4)] re-

ported a case of pneumonia treated with sulfapyridine which upon the sixteenth day of hospitalization developed a generalized erythema followed on the nine-

teenth day by the formation of bullae of the skin. Davis [1939 (5)] reported the case of a sixteen-month-old child who had pneumonia and was treated with sulfapyridine. On the fourteenth day of hospitalization a morbilliform diffuse rash developed. This changed to a scarlatiniform rash with subsequent exfoliation. Noteworthy features of this case, besides the rash, were edema, cheilitis, blepharitis, stomatitis, and neutropenia.

ERSKINE [1939 (6)] summarized twenty-two cases of toxic skin reactions to sulfapyridine which he observed at Guy's Hospital, London. Thompson [1939 (7)] reported three cases of toxic skin reactions to sulfapyridine. The rash in

one case resembled measles, in another rubella, and in another scarlet fever. This last case developed acute exfoliation of the skin. Taylor and Chitakara [1939 (8)], in India, reported two cases of exfoliative dermatitis following the use of sulfapyridine in the treatment of pneumonia.

Detweiler *et al.* [1940 (9)] state that in ninety cases of pneumonia treated with sulfapyridine a morbilliform rash developed in six.

Case I

THE patient, a Negro male thirty-two years of age, came to the Genito-urinary Clinic on October 2, 1939, with a gonorrheal urethritis of five days duration. He was given a course of sulfapyridine consisting of two grams daily in divided doses. He received the drug until October 19, 1939 (17 days), at which time it was stopped. A total of thirty-four grams was given in this period of time.

On October 30, 1939 the patient came into the hospital with the complaints of cough, fever, anorexia, and pain in the groin. He observed anorexia and pain in the groin beginning October 23, four days after he had stopped taking the drug. A sudden severe chill occurred two days before admission. This was followed by fever, dysphagia, and a generalized rash with itching. Examination on admission revealed an acutely ill patient. The temperature was 105° F., pulse 120 per minute, and respirations 30 per minute. The systolic blood pressure was 120 and the diastolic 80 as measured in mm. of mercury. There was a non-productive, harsh cough and the skin was hot and dry. There were several erythematous areas on the forearms and chest. The lips were dry and parched. There was discrete enlargement of the epitrochlear, axillary, inguinal, and cervical lymph nodes. There were photophobia and injection of the conjunctiva. The tongue was heavily coated and there was diffuse redness of the hard palate, fauces, and pharynx. There was a serous discharge from the meatus. Diagnostic impressions at this time were: 1. Streptococcus angina with septicemia, 2. Agranulocytic angina, 3. Infectious mononucleosis.

Course

OCTOBER 30 to November 18, 1939 the course was stormy with frequent chills and fever to 104° F. There was edema of the face and neck and generalized lymphadenopathy. The throat was very sore, the mucous membrane purple in color and ulcerated. The erythematous rash covered the whole body. All of these findings gradually receded over a period of one month. The edema subsided completely and the mucous membranes desquamated in sheets.

LABORATORY: Repeated urine examinations showed no pathological findings. The erythrocytes and hemoglobin remained essentially within normal limits during the course of the disease. A leukocyte count of 33,520 with 40 per cent polys, 50 per cent lymphs and 10 per cent monos was present at the height of the disease. Agglutination tests for typhoid, paratyphoid A and B, tularemia, brucellosis, and Rocky Mountain Spotted Fever were negative. Five consecutive blood cultures were negative. A sulfapyridine blood level was not taken upon admission. The blood sugar was 84 mg., and the urea nitrogen 14 mg. per 100 cc. The Kahn test was negative.

On November 15, 1939 he was seen in consultation by Dr. Fred D. Weidman who stated, "This eruption like erythema multiforme bullatum is in all probability due to a reaction to sulfapyridine."

The therapy in the hospital consisted of blood transfusions, nicotinic acid 200 mg. daily, cevitamic acid 150 mg. daily, brewers' yeast \mathfrak{z} iii daily, cod liver oil \mathfrak{z} ss daily, and intravenous saline and glucose.

On December 8, 1939, the patient was dismissed. There was no evidence of any systemic damage from the sulfapyridine intoxication. The urea clearance was 88 per cent, the Mosenthal test normal, and the cellular elements of the blood within normal limits.

On February 26, 1940, the patient was seen in the Genito-urinary Clinic. He was in good general health. Culture of the prostatic fluid was negative for gonococci. The cellular elements of the blood were

within normal limits and a blood Wassermann was negative.

Case II

THE patient, a Negro male twenty-one years of age, came to the Genito-urinary Clinic on January 25, 1940 with a gonorrheal urethritis of seven days duration. A course of sulfapyridine was begun. Three grams of the drug were given daily in divided doses. By February 19, 1940 the patient had received a total of 63 grams of the drug. At this time the drug was stopped. The sulfapyridine blood level varied between 3.7 mg. per 100 cc. and 5.2 mg. per 100 cc. At the time of stopping the drug the urethral exudate was still positive for gonococci.

On February 25, 1940 the patient came into the hospital with the complaint of "body rash." On February 21 (two days after the drug had been stopped) he first noticed a rash on his face. The next day the rash appeared on his arms. The neck and face began to swell and at the time he came to the hospital he had generalized swelling of the torso from the pubis to the shoulders. Examination on admission showed a well nourished patient, not acutely ill. He was covered with small, maculopapular and vesiculopustular lesions on the face, extremities, and torso. The temperature was 100° F., pulse 110 per minute, and respirations 24 per minute. The blood pressure was 112 systolic and 80 diastolic as measured in mm. of mercury. Many subcutaneous lymph nodes were palpable. Notable were the occipitals, cervicals, axillaries, epitrochlears, and inguinals. There was edema of the eyelids and injection of the conjunctiva. The neck was markedly swollen. The spleen was palpable. There was a purulent urethral discharge. Diagnostic impressions at this time were: 1. Dermatitis medicamentosa-sulfapyridine, 2. Secondary lues.

Course

FROM February 25th to April 4, 1940 the temperature never went above 101° F., and the generalized eruption, at first erythematous, then maculopapular and vesi-

culopustular in type, disappeared by exfoliation of large sheets of skin. The recovery was slow.

LABORATORY: Repeated examinations of the urine revealed no pathological findings. Repeated erythrocyte counts and hemoglobin determinations were within normal limits. The leukocyte count on one occasion was 15,000 with 74 per cent polys and 26 per cent lymphs. Three Kahn tests were negative. The blood sugar was 75 mg. and the urea nitrogen was 9 mg. per 100 cc. The icterus index was 8 units, the carbon dioxide combining power of the plasma 42 volumes per 100 cc., and the cholesterol 114 mg. per 100 cc. of blood. The total plasma protein was 5.6 gm. per 100 cc. of blood, the albumin 3.6 gm., the globulin 1.8 gm. with a ratio of 1.8. Examinations of the blood for sulfapyridine, sulfanilamide, and methemoglobin were negative.

Therapy in this case consisted of the application of a bland ointment to the skin, ample fluids, and rest. On April 17, 1940 the patient was discharged from the hospital.

Two weeks later he returned to the Genito-urinary Clinic. On his return there was no urethral discharge, but culture of the prostatic fluid revealed gonococci. The skin was covered with dry scales. The patient eventually defaulted from the clinic.

Case III

THE patient, a Negro male aged nineteen, came to the Genito-urinary Clinic on December 19, 1939 with a gonorrheal urethritis of seven days duration. He was given a course of sulfapyridine consisting of three grams daily in divided doses. By January 15, 1939 he had consumed 71 grams of the drug. During this period of time the sulfapyridine blood levels varied from 2.6 mg. to 3.3 mg. per 100 cc. of blood. Electrocardiographic tracings and erythrocyte and leukocyte counts were within normal limits. On January 15, 1940 the patient came into the hospital complaining of a body rash. He stated that

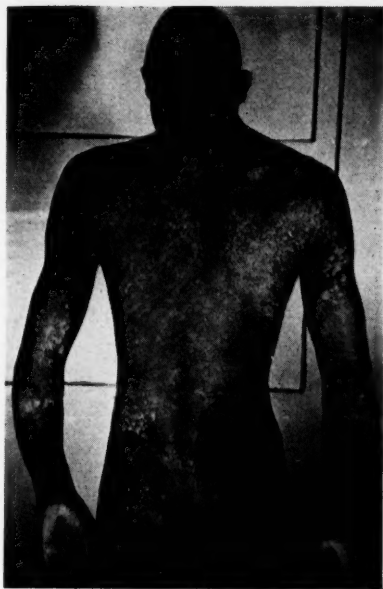


Figure 1

The appearance of Case III on admission.

one week before admission he had observed a rash appearing on his body. It occurred first on the back and later spread to the arms and chest. There was considerable itching of the skin. He stated that while taking the medicine from the Clinic he had frequent headaches, nausea, and pains in the joints. Past history revealed that the patient had a lesion on the penis one year before admission. Examination on admission showed a well nourished male, not acutely ill. The temperature was 99° F., the pulse 100, and the respirations 22 per minute. The blood pressure was 120 systolic and 80 diastolic as measured in mm. of mercury. Small maculopapular and vesicular lesions covered the face, neck, trunk, and extremities. Exfoliating debris covered many areas. There were moist areas in the axillae and groin. There was generalized, discrete enlargement of the lymph nodes. There were herpetiform lesions about the eyes and injection of the conjunctiva. A urethral discharge was pres-

ent. Diagnostic impressions at this time were: 1. Dermatitis medicamentosa-sulfapyridine. 2. Gonorrheal urethritis. 3. Lues.

Course

FROM January 15th to February 20, 1940 the temperature never went above 99° F. The generalized eruption gradually faded and was followed by desquamation of large sheets of dry skin.

LABORATORY: Several urine examinations and blood counts were essentially negative. The Kahn test and Wassermann test were both four plus on admission. The blood sugar was 84 mg. and the urea nitrogen 9 mg. per 100 cc. The blood cholesterol was 266 mg. per 100 cc. Examination of the blood for sulfanilamide was negative. On admission the blood level of sulfapyridine was found to be 0.7 mg. per 100 cc.

Therapy in this case consisted of the application of a bland ointment to the skin and the beginning of an antiluetic regimen. He was discharged from the hospital on February 20, 1940.

The patient was seen one week later in the Genito-urinary Clinic. There was no urethral discharge at this time, but culture of the prostatic fluid showed gonococci. The electrocardiographic tracing was normal as were the cellular elements of the blood.

Comment

THERE appeared to be a noticeable difference in the degree of severity of the skin eruptions and general reactions to sulfapyridine in these three cases. Case I appeared to be near death, while the other two cases, though not equaling each other in severity, were in no danger of loss of life.

In each case the eruption was generalized. The lesions, at various times, were maculopapular, vesicular, pustular, and bullous. All cases had severe itching and in each the skin desquamated. Associated generalized, discrete enlargement of the lymph nodes occurred in each case.

In all three patients the urine on repeated examinations failed to show any

evidence of renal damage. In the two more severe cases leukocyte counts were elevated, but no appreciable elevation of the count occurred in the mildest case. The erythrocyte counts and hemoglobin levels remained within normal limits during the course of the disease in each patient.

We wish to emphasize that the individuals developing these severe skin reactions to sulfapyridine were among those who had a gonorrheal infection which was refractory to specific treatment. They were subjected to prolonged treatment with a much higher total dosage of the drug than the average patient treated. The average case of gonorrheal urethritis received 24 grams of the drug over an average period of eleven days. Case I had received 34 grams, Case II 75 grams, and Case III 60 grams of the drug at the time that the skin reactions developed.

None of the patients showed any evidence, previous to the severe toxic skin reaction, that there was any great sensitivity to the drug. Case I had no complaints

during the course of treatment. Case II complained of headache on several occasions. Case III complained of nausea on one occasion while attending the clinic. His sulfapyridine blood level was never above 3.3 mg. per 100 cc.

Each case, when seen following discharge from the hospital, failed to show any evidence of permanent damage resulting from toxic reaction to the drug.

Summary

THREE cases developing severe skin reactions during the course of treatment of gonorrheal urethritis with sulfapyridine are reported in detail. We believe it important to call attention to the fact that these severe toxic reactions occurred in patients subjected to prolonged treatment with sulfapyridine.

Note.—The authors wish to express their appreciation to Dr. W. H. Mackinney and Dr. H. W. Schaffer for their cooperation in the preparation of this report.

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IRVING ZUELKE BUILDING.

CULTURAL MEDICINE

Three Thousand Years OF PHARMACY AND MEDICINE

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IN the time of Tut-ankh-Amen, no one reproached the pharmacist for carrying sidelines. There was but one he could and did carry—the practice of medicine. Pharmacist and doctor were one.

Picture the modern druggist gathering flyspecks to fill a prescription. In ancient pharmacy, flyspecks were used to cure crying babies; the prototype of our modern soothing syrups. Possibly the old nursery rhyme went something like this;

"Hush little baby, don't you cry,

You'll get a flyspeck, bye and bye."

Herodotus, writing in the fifth century B.C., says of the Egyptians: "No doctor is permitted to practice any but his own branch." Thus we know of early specialization. Early records show that all doctors were priests; paid out of the royal Egyptian treasury and permitted to accept fees in addition. What a Utopia; it almost smacks of the 'new deal.'

There were severe penalties for adding

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to, or varying, a prescription, indicating that 'substitution' was a recognized evil.

The symbol of the two serpents and winged wand, adopted by some as the emblem of medicine in the 'caduceus,' played a part in the healing art of the Babylonians, dating back to 4000 B.C. Some attribute it to Hermes (Mercury), and so the argument continues. Recalling that Hermes was the god of thieves and traders, we of the profession better side with those who accept the staff and single serpent of Æsculapius (American Medical Association).

We think the practice of medicine is difficult today. Well, of many ancient and separate hells, one was especially reserved for the pharmacist and the doctor, created and publicized by their own professions; not so unlike modern days when, for many, the practice of medicine is hell.

PHYSIC in the fifth century B.C. was divided into three schools: one school had faith in medicines; one in diet; and

one in manipulations. Did these past centuries, after all, radically differ from the present-day regulars, food faddists and bone-bouncers?

About the time of Celsus, the first Greek surgeon settled in Rome. He was well received; given an office and the 'honorable' title of 'healer'. But the following should be noted by our surgeons. He resorted so promptly to knife and cautery and his mortality was so high that he was called 'carnifex', meaning 'the executioner', and finally was driven from the City.

Pliny reproached the doctors for prescribing medicines without knowing their content. Today, many commercial distributors ask us to accept their products without question. A prolific writer, although not an originator, he lost his life in the crater of Vesuvius in A.D. 79. To him we are indebted for the story of Cleopatra's pearls, dissolved in vinegar to fulfil a wager that it was possible to consume the value of one million sestericii at a single banquet.

There was also a brighter side of medicine. Under Julius Caesar, doctors were granted citizenship. Later, when Galen flourished, they were freed from all taxes and military service and, mark you, at a time when the Romans were rapidly deteriorating physically. Galen's most famous prescription, by the way, is the modern well known 'cold cream'.

Avicenna founded the Greco-Arabic school of medicine. His writings were authoritative as late as 1650 in the universities of Europe. One unfavorable influence was his emphatic teaching that it was beneath the dignity of any doctor to practice 'the doubtful manual art of surgery'.

Following Hippocrates by several centuries came Cornelius Celsus. He laid down certain qualifications necessary for surgeons. I quote from his writing: "The surgeon must be young or at least not old; his hands steady and firm. He must be able to use his left hand with dexterity equal to the right; his eyesight must be acute, his mind intrepid, subject to pity but not enough to be moved by the cries of the patient. He should never hurry or

cut less than necessary and do everything just as if the patient's screams made no impression."

THE Arabs were noted for their hospitals. One is described as follows. There was a large hall where musicians played night and day. Another hall where story-tellers were employed for the benefit of those suffering from insomnia. What a suggestion for the doctor who comes home at three A.M. and, finding his wife awake, tries to remember a 'new' one. He could have one suggested at his hospital. The religiously inclined could listen to the reading of the Koran, which went on incessantly day and night. Upon discharge the patient received some gold pieces that he might not be obliged to attempt hard labor at once. With all of our improvements, I know of no hospital management that can match this.

And you gentlemen with shiny domes and hair in absentia; why waste your substance on expensive hair tonics? Take this ancient advice. Fill an earthen vessel with mice, stop the mouth with clay, bury it beside a slow fire. So let it be for a year; then take whatever may be found therein. But (and this is the amazing part of this prescription) it is very urgent that he, who shall lift it, have thick gloves on the hands, lest at his fingers ends the hair come sprouting forth. The amazing modesty of the ancients is revealed by comparing these claims with those made today on radio programs.

HOW far have we advanced in the past three thousand years against pediculosis? Here is an ancient cure for lice. Take one-third of quicksilver, two-thirds of old butter and use locally; the prototype of our modern blue ointment.

In Salerno in the eleventh century the study of anatomy was resumed under a decree which permitted a complete dissection of the human body once every five years. That was better than what is permitted today in the State of New Jersey, for there no dissections are allowed and there are no medical schools in that State. There

—Concluded on page 146

CONTEMPORARY PROGRESS

Hemiplegia of Cortical or Venous Origin

H. R. MERWARTH (*Brooklyn Hospital Journal*, 2:193, Oct. 1940) points out several marked differences between hemiplegia due to arterial occlusion and that due to venous occlusion. In arterial occlusion, the onset is sudden with loss of consciousness or "clouding of the sensorium," and sometimes symptoms of shock. With venous occlusion, the onset is not necessarily sudden, and the patient is mentally clear and alert. The facial paralysis and speech disturbances that characterize arterial occlusion are not present in cases of venous occlusion. Spastic muscle tone and rigidity characterize the early stages of venous occlusion; the sensory disturbance is of the cortical type. In the upper extremity, recovery takes place first in the hand, then in the elbow and shoulder, in venous occlusion, while in the lower extremity the recovery occurs first in the hip and knee and lastly in the foot. In arterial occlusion the finger movements are recovered last, if at all. This characteristic venous hemiplegia is produced by occlusion of the rolandic veins. Three illustrative cases are reported. Such venous occlusion may be caused by infection of the superior longi-



tudinal sinus, pressure of a tumor or operative interference with a vein. The ultimate degree of recovery depends upon the establishment of an adequate collateral circulation.

COMMENT

In addition to the above listed contrasts. I should like to emphasize the variability from time to time of the recovering picture in a venous hemiplegia. In the ordinary capsular hemiplegia, where recovery takes place, there is a steady progressive mode of recovery. By contrast there is a marked fluctuation in the return of function to the recovering parts in a venous hemiplegia. This fluctuation is observed particularly in the return of motor function. A part previously active may lose its power for a brief period and then power be found to have returned at a subsequent examination. This appearance and disappearance of motor power was studied carefully in one case where venous dysfunction followed deliberate section of a sinus for removal of a parasagittal tumor. In the course of several days' observation the power in the left hand was seen to appear, disappear and return again at least four times, before permanent return occurred. The phenomenon of fluctuation is carried over into the sensory sphere and is noted in the variable responses in the gnostic sphere found on repeated examinations before complete return of sensory appreciation.

H.R.M.

The Treatment of Amyotrophic Lateral Sclerosis with Vitamin E (Tocopherols)

I. S. WECHSLER (*American Journal of Medical Sciences*, 200:765, Dec. 1940) previously reported 2 cases of amyotrophic lateral sclerosis treated with synthetic vitamin E; since then he had had occasion to treat more than 30 cases, but only 15 of these have been under his continued personal supervision; in addition 5 other cases treated at Montefiore Hospital have been carefully followed up. In all these cases synthetic vitamin E (ephymal or alphatocopherol acetate) was given by mouth in doses of 30 to 50 mg.; in about half the cases tocopherol in oil was given by intramuscular injection (50 mg. daily). All patients were given food containing vitamin E: lettuce, kale, whole wheat bread, coarse cereals, butter, banana, fresh corn, fresh peas and beans, yolks of eggs, and fat beef. The first three foods named are richest in this vitamin. As vitamin E is fat soluble, bile salts were given to improve absorption. In addition, every patient was given 2 teaspoonfuls of whole wheat germ oil daily. The whole vitamin B complex has been given, although it is a question whether this is necessary or not. Of the 20 cases treated, 11 have shown some degree of improvement. Of these 2 have apparently recovered; 4 showed marked improvement (one of these had advanced bulbar signs); and 5 showed "moderate degrees" of improvement. In

3 patients the disease has been arrested; 2 patients, in an advanced stage of the disease, died; the others have grown worse, one after an initial improvement. (A footnote states that 2 of these patients have recently died). Except for one male with symptoms of only three months' duration, who apparently recovered, the 6 patients showing the most marked improvement were all females of the premenopause age, although half of the group treated were males. In those cases in which improvement occurred, it was fairly rapid; the fibrillations were apt to disappear first. From these results it appears that deficiency of vitamin E "plays a specific rôle" in the etiology of some types of amyotrophic lateral sclerosis. Dietary deficiency, gastro-intestinal and hepatic disease, and possibly other vitamin deficiencies "may play additional causative rôles." There may be an interference with the absorption of vitamin E.

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COMMENT

The reviewer has had occasion to treat a small group of this disorder in which the picture varied from an early pure bulbar syndrome to that of early pure pyramidal signs in the lower extremities. Two of the cases have since died, although in one of the patients the drug was discontinued because the family felt that the patient was made worse by its administration. One patient with marked signs of pyramidal disease who failed to improve after intensive therapy with liver, thiamin chloride and nicotinic acid progressed to a state of good health only after the introduction of synthetic vitamin E. It must be

MEDICAL TIMES, MARCH, 1941

admitted that this patient was not a definite instance of amyotrophic lateral sclerosis but the result obtained strongly suggests the efficacy of this vitamin in certain vague cases of unknown degenerative diseases.

H.R.M.

Changes in the Brain in Alcoholism

L. D. STEVENSON and his associates at Bellevue Hospital (*Archives of Neurology and Psychiatry*, 45:56, January 1941) report a study of the changes in the brain in 44 cases of chronic alcoholism, in 22 of which a diagnosis of alcoholic encephalopathy had been made. A study of the symptoms in these 22 cases shows that some alteration of consciousness had been present in every instance; 16 patients were described as "confused"; 15 had hallucinations and 10 had tremors; only 2 showed delirium and 2 catatonic symptoms. The most frequent abnormal neurological sign in these 22 cases was the grasping reflex (14 cases); 13 patients showed the sucking reflex; in 9 cases, there were changing rigidities. In 18 cases there was some change in the pupillary reflex, inequality of pupils or paralysis of ocular muscles. In 13 cases ankle or knee jerks or both were absent. Some evidence of avitaminosis was noted in 14 cases. The pathological study of the brains in these cases showed fibrous thickening of the arachnoid in "almost all"; edema in 18 cases. Petechial hemorrhages were found in 16 cases, but they were small and often difficult to discover except by careful search. Increase of lipochrome in nerve cells was noted only in cases that had shown Korsakoff's syndrome. No increase in vascularity was demonstrated except in the mamillary bodies and there in only 5 cases. Gliosis was noted in 8 cases. Pathologic changes in the optic nerves were uncommon, and if present, were of slight degree. Ependymitis was present in 6 cases. These pathological changes are slight as compared with "the severe and fatal illness of the patient"; also there was little correlation between the clinical picture and the anatomic distribution of the lesions in the brain except

in some cases presenting Wernicke's syndrome. The authors are of the opinion that few, if any, of these pathological changes in the brain are due to alcohol; some of them "are certainly found in deficiency states"; and Jolliffe considered that in 9 of these cases the encephalopathy was due to nicotinic acid deficiency. The authors have been unable to confirm the observations of some previous investigators in regard to the frequency and severity of certain pathological changes in the brain in alcoholism. They are of the opinion that "the changes usually responsible for death and for the clinical picture" in alcoholic encephalopathy "cannot be demonstrated under the microscope by methods now at one's disposal." Most of the changes that have been demonstrated in the present study "are probably due to avitaminosis (B_1 and B complex) rather than to alcohol itself."

COMMENT

The reviewer enjoyed the privilege of discussing with Dr. Stevenson this whole problem and of hearing its presentation prior to publication. It is a distinct contribution to the subject. The emphasis placed on the cerebral and other brain changes induced by vitamin deficiency is the crux of the problem.

It is the feeling of the reviewer that there are a certain number of patients with signs of a chronic "cerebellar" disorder where protracted indulgence in alcohol with resulting vitamin depletion is the provocative cause of the picture.

H.R.M.

Inheritance of Cerebral Dysrhythmia and Epilepsy

W. G. LENNOX and his associates (*Archives of Neurology and Psychiatry*, 44:1155, Dec. 1940) report electroencephalographic studies of 94 patients with epilepsy and 155 of the parents, siblings or children of these patients. All of the 94 patients with epilepsy showed abnormalities in the encephalogram or "cerebral dysrhythmia." Definite abnormalities were found in the encephalogram of 60 per cent. of the relatives of these patients, and in 10 per cent. of a control group of 100 persons who had no near relative with

epilepsy. In 55 of the families, encephalographic records were obtained for both parents; in 35 per cent. there were definite abnormalities in both parents, while both showed "unmistakably normal" records in only 5 per cent. Encephalographic abnormalities occurred as often in the relatives of patients with "symptomatic" epilepsy (due to trauma or some other cerebral lesion) as in relatives of patients with "essential" epilepsy. Such abnormalities occurred more frequently among the relatives of female than of male patients, and more frequently in female than in male relatives. The records studied include 5 pairs of identical twins; each pair of twins showed a similarity of "the fundamental rhythm" in their encephalograms, but epileptic seizures occurred in both twins in only one pair. The evidence indicates, in the authors' opinion, that the "cerebral dysrhythmia" of epilepsy is inheritable, and that when such dysrhythmia is demonstrable, it may be regarded as representing a predisposition to epilepsy or some allied disorder. This cerebral dysrhythmia "may prove to be a dominant trait." These observations "should be of practical value in the prophylaxis and eugenics of epilepsy."

COMMENT

This paper illustrates another practical use to which can be put this newer diagnostic instrument in the field of neurology. The data obtained by this group of workers point overwhelmingly to a transmitted factor in individuals subject to a paroxysmal convulsive disorder.

The obtaining of abnormal tracings in a 10 per cent control group is intriguing. It suggests the possibility of a pre-existing smoldering fire ready to be lighted up by trauma, infection or other causes.

H.R.M.

Treatment of Unilateral Paralysis Agitans by Section of the Lateral Pyramidal Tract

TRACY J. PUTNAM (*Archives of Neurology and Psychiatry*, 44:950, Nov. 1940) notes that while the treatment for paralysis agitans has been "pharmacologic" and many different drugs have been tried, severe localized tremor justifies the use of

surgery. Various types of operations have been performed. In 2 cases reported by the author in which there was tremor of one hand, relief was obtained after resection of "the corresponding transitional cortex, at the anterior edge of the Betz cell region." In 6 other patients, section of the pyramidal tract was done for the relief of tremor of the arm and leg on one side. In 2 cases only partial section of the pyramidal tract was done, with some improvement resulting. In the other 4 cases the section was "apparently complete, between the posterior horn and the horizontal meridian of the cord." In all these cases there was marked improvement in the tremor and the disability was less than that observed following resection of the cortex. In a supplementary note the author states that while the article was in press, 2 other patients have been operated, one by section of the lateral pyramidal tract, the other by removal of a large area of cortex; the results in both cases were good with complete relief of tremor and practically no disability in the first case. In considering the indications for either the cortical operation or the chordotomy, the question of the extent of the cortical operation is to be considered. The author's experience indicates that tremor can be relieved, with little disability resulting, by an operation "that does not wholly sacrifice the Betz cell area." If this is true, a cortical operation is "probably to be preferred" in cases where the tremor involves the face, neck or jaw, or if the leg is not involved. If the tremor is severe in both the leg and the arm on one side, section of the pyramidal tract is preferable as it causes less disability of the extremities involved than "even a limited cortical operation."

COMMENT

The reviewer is convinced that the medical treatment of paralysis agitans is but a stop-gap with the present available medications prescribed for its relief. The ultimate effect of long continued use is discouraging.

By contrast the introduction of newer surgical methods has produced startlingly beneficial results, whether in the cortex as shown by Burg, Klemme and Putnam, in the striatal

system (Browder and Meyers), or in the cord as discussed alone by Putnam.

A point of extraordinary interest in Putnam's work is the failure completely to disrupt volitional movements in the arm and leg after interference with the allegedly most im-

portant cortical connections, viz., the corticospinal tract.

Those interested in teaching and organic neurological problems should read the article in its entirety.

H.R.M.



Roentgen Ray Therapy in the Treatment of Herpes Zoster

P. McCOMBS, A. TUGGLE and C. M. GUION (*American Journal of Medical Sciences*, 200:803, Dec. 1940) report the treatment of 72 cases of herpes zoster with roentgen-ray irradiation. In these cases the thoracic and lumbar nerve roots were chiefly involved; there were only 6 cases with cranial nerve involvement. The method of treatment used is to give 200 r daily or every other day for five or six treatments, with 200 K.V., 1 mm. copper plus 1 mm. aluminum filter, and distance 50 cm., in a 6x15 portal directly over the spinal ganglia of the nerves involved. In some cases treated a lower total dosage was employed, but the authors recommend giving a course of at least five treatments (total dosage 1000r), even if marked relief is obtained with a smaller dosage, as there may be a recurrence of symptoms if the dosage is insufficient. Of the 44 patients who were treated in the first seven days of the disease, 39, or 89 per cent., were completely relieved; 2 were improved, and only 3 showed no improvement. Of the 11 patients treated between the eighth and fourteenth day, 8, or 72 per cent., were completely relieved, 2 improved, and one not benefited. Four patients were treated between the fifteenth and the twenty-eighth day of the disease; of these 2, or 50 per cent., were cured. In the 13 cases treated after the twenty-ninth day, 7, or 54 per cent., were cured and one partially relieved. These results

show the importance of early treatments. Symptoms may be exaggerated after the first treatment; patients should be warned of this possibility and advised that improvement will follow subsequent treatments. From their results in this series of cases the authors are convinced that "Roentgen therapy is an ideal agent for the relief of the herpetic syndrome."

COMMENT

This work ties up with that which has long been done in France in the early treatment of poliomyelitis with roentgen ray irradiation. The early, empirical work with the roentgen ray in infections is being rationalized today by such studies as are mentioned in this article, although the x-ray treatment of acute poliomyelitis has been done for over twenty years. In the hands of the reviewer local diathermy and the static current to the area of the affected ganglia has succeeded even in cases where roentgen therapy failed.

The most dramatic relief from herpes zoster has come from artificial fever treatments, where instantaneous relief of symptoms occurs during the first treatment.

N.E.T.

Specific Effects of High-Frequency Currents and Magnetotherapy

K. F. NAGELSCHMIDT (*British Journal of Physical Medicine*, 3:201, Nov. 1940) notes that in the earlier forms of diathermy, "no other primary physical effect except heating has ever been proved to exist." With the introduction of very high frequencies, short- and ultra-short wave diathermy, the controversy as to the specific effects of various wave lengths "arose all over again." While the author did not accept any of the various claims made in regard to the effects of various wave-lengths, yet he recognized that there were some indications that "some unknown agent might be active in some still obscure way." These phenomena included

tonic effects on the whole body with local applications; immediate or even instantaneous relief of pain before a measurable amount of heat could have been produced in the tissues; occasional "excitatory or irritative effects" as opposed to the general sedative effects of diathermy. The author found that inductotherms (Victor and Marconi) produced different effects from the older diathermy machines or the Siemens short-wave apparatus. The inductotherm coils produce an electric field just as other diathermy machines, but in addition they produce a magnetic field inside the space surrounded by the coil. In such a magnetic field induced by a high frequency current, small electric currents are produced in the body tissues, including the blood vessels. Such small currents must have some definite effect on muscle tone, conductivity of the nerves, on the vegetative nervous system, and probably on "the colloidal system." The author does not consider clinical applications of "magnetotherapy" in this paper. He wishes to emphasize, however, that "magnetic forces are not unimportant to life, and that their investigation opens a new and wide field of biological and medical research. Having the possibility of producing changes of potential and actual electric currents, however small within the body, gives a wide scope for medical treatment by a new form of therapy. . . . Much more work has still to be done in this connection."

COMMENT

Nagelschmidt is one of the pioneers in high frequency therapy. In fact it was he who gave the name "diathermy" to the literature. Since his efforts to solve all of diathermy were halted by permanent conclusions, it seems that he is now trying to open up another field that, however, is too theoretical to merit serious consideration. If magnetic forces were physiologically active, Abrams' crazy ideas of diagnosing patients at a distance, if they stood facing the West at sundown, might have brought out at least a grain of useful information. The inductotherm coils do not produce an electric field as do other diathermy machines. The action of the current going through the inductotherm coil is purely the creation of electromagnetic changes in the tissues around the coils. These changes in

potential set up molecular disturbances and nothing else that any scientist has been able to find out. Molecular disturbances cause heat and it is wishful thinking to believe that anything else can happen.

N.E.T.

Effect of Hyperpyrexia on the Blood pH

S. L. OSBORNE (*Archives of Physical Therapy*, 22:17, Jan. 1941) reports studies of the changes in the pH of the blood in 10 patients given "fever therapy" for infectious arthritis. In these cases the hyperpyrexia was induced by a combination of the inductotherm and an insulated metal cabinet. Determinations of the blood pH were made prior to starting the treatment, when the rectal temperature reached 104° F., and at the end of the four-hour period during which the temperature was maintained at this level, and finally when the patient's temperature returned to normal. The pH of the blood for the control period before beginning treatment ranged from 7.30 to 7.52, averaging 7.415 ± 0.01 . When the rectal temperature reached 104° F., the pH was increased, ranging from 7.35 to 7.72 and averaging 7.55 ± 0.016 ; at the end of the four-hour period of hyperpyrexia, the pH varied from 7.30 to 7.83 with an average of 7.52 ± 0.0197 . When the temperature returned to normal, the pH decreased to approximately the pre-treatment levels, from 7.32 to 7.51 with an average of 7.418 ± 0.0095 . These findings indicate that hyperpyrexia induces a definite alkalosis, which is apparently uncompensated. Other investigators have also found that a definite alkalosis occurs during hyperpyrexia. The loss of CO₂ from the body through the lungs and sweat during fever therapy is undoubtedly "of prime importance" in increasing the alkalinity of the blood. The author has noted that cyanosis not infrequently occurs in patients undergoing fever therapy; he considers that it "probably indicates cardiac embarrassment." But in the cases studied in this series there was no evidence of cardiac embarrassment or tetany.

COMMENT

This study by Osborne confirms the opinion that has gradually been reached that high humidity is of prime importance in artificial hyperpyrexia and explains why patients seem to be more comfortable when drinking some of the artificial saline waters which tend to combat alkalosis.

N.E.T.

Infra-Red Heating Over Taped Surfaces

B. L. BOYNTON (*Archives of Physical Therapy*, 21:733, Dec. 1940) notes that it is frequently necessary to apply some form of heat over a taped surface, and for this purpose infra-red heating is best suited. High frequency currents produce an accumulation of perspiration beneath the adhesive tape with the result of greater current concentration in some areas and danger of burns. Hot water and melted paraffin, when used to produce heat over taped surfaces, even if the tape is waterproofed, cause it to loosen. Infra-red radiation may be either luminous or non-luminous; the source for the former is a tungsten filament bulb, for the latter a resistance-coil generator. If white adhesive tape is placed over the skin the amount of radiant energy reflected will be greater than that reflected from the skin alone, and there will therefore be less energy available for heating the underlying tissue. This is more marked for the luminous than for the non-luminous radiation, as the reflection of the latter is less "in both conditions." It is well known that a dark surface absorbs more radiant energy than a white surface; therefore experiments were carried out with various methods of blackening the surface of adhesive tape to determine the effect of this procedure on the skin temperature of the area covered by the tape. It was found that higher skin temperatures were obtained in areas strapped with the blackened adhesive tape, whatever the source of radiation used. The differences in surface temperature between the black and the white adhesive tape areas were greater for a luminous than for a non-luminous source of infra-red radiation. The black-backed adhesive tape used commercially for masking gave satisfactory results in these ex-

periments, but this tape "seems to be too light in weight to be useful for supportive strapping." A simple method, and one as effective as any now available for clinical use, is to cover the adhesive tape strapping with a black cloth, as, for instance, employing a black cotton stocking over an ankle strapped with adhesive tape. The author suggests that a black-backed adhesive tape might be designed suitable for strapping when the application of heat is desirable.

COMMENT

An ingenious adaptation of Franklin's famous experiment, which proved that black surfaces absorb heat, has been made use of by the writer of this paper. Too frequently adhesive strapping creates a situation so that patients can not get the maximum amount of relief by the application of heat.

Of course, infra red tends to be reflected the same as does visible light but since it penetrates further in spite of reflection, the non-luminous source is preferable in work with blackened adhesive.

N.E.T.

Roentgen Therapy of Psoriasis of the Nails and Psoriatic Arthritis

W. C. POPP and E. A. ADDINGTON (*Radiology*, 36:98, Jan. 1941) report the treatment of 24 cases of psoriasis with the roentgen rays. In 6 of these cases only the fingernails were involved, and in 18, the nails of both the hands and the feet. Nine patients showed arthritis of the distal joints. While many who use the roentgen rays in the treatment of psoriasis protect the nail base from the irradiation, the authors have made it a practice to apply the rays to the dorsum of the hand from the tips of the nails to the wrist, and to the dorsum of the foot from the tips of the nails to the ankle. This method was used in all cases, whether there was an associated arthritis or not. Treatments are given with 140 kv., with a 4 mm. aluminum filter for the hands and 6 mm. for the feet. Treatments were usually repeated twice at monthly intervals; results must be evaluated at least three months after the last treatment. In the cases with arthritis the joint symptoms frequently subside after the first treatment, although there

may be a temporary exacerbation in the first few days after treatment, which rapidly subsides. In 6 cases, complete remission of all changes in the nails was obtained and has persisted; 10 cases showed marked improvement of such a degree that no subsequent treatment was considered necessary, "the lesion in the nails remaining quiescent." Only 2 patients failed to show any improvement. Of the 9 patients with arthritis, one could not be traced, 4 are completely relieved and 4 show marked improvement. The good results in this series have been maintained for six months

to five years. As psoriasis tends to recurrence, it is probable that a repetition of treatment will be necessary in many cases. The same difficulties that arise in repetition of treatment with roentgen rays for psoriasis of the skin will probably arise in repeating treatment for psoriasis of the nails, and such repeated treatments should be given with caution. The results in treatment of psoriasis of the nails, the authors have found, are definitely better when the whole hand or foot, rather than the nails alone, are exposed to the roentgen rays.



INDUSTRIAL MEDICINE AND SOCIAL HYGIENE

Use of Miniature X-Ray Films in Tuberculosis Case Finding

B. H. DOUGLAS and his associates in the Department of Health of Detroit (*American Journal of Public Health*, 30:1427, Dec. 1940) report that in Detroit a special effort has been made recently to improve the tuberculosis case findings. For this purpose a survey was undertaken in which private physicians participated in making tuberculin tests and x-ray examinations. Three groups of persons were examined: contacts with known cases of tuberculosis; "suspects" with symptoms; persons residing in areas with high tuberculosis mortality. In three and a half years, 156,312 persons were tuberculin tested, of whom 38,395 gave positive reactions; of the positive "reactors" 34,059 were examined by x-ray and 890 new cases requiring treatment were found. As the x-ray examination of the chest is considered the best means of detecting early pulmonary tuberculosis, special effort was

made to develop "an inexpensive yet accurate" method for making such an examination. After much experimentation, it was found that a photograph of a fluorescent image 4x5 in. in size best fulfilled the requirements; for this a special fluorazure screen is employed. These small films can be made rapidly—at least one a minute—and are relatively inexpensive; by comparison with large films in a series of 1600 examinations, they have been found to be very accurate. For case finding purposes diagnosis can be made with sufficient accuracy, as a rule, to determine whether or not the patient needs hospitalization. The miniature films have been adopted for use for diagnosis in new admissions to the Detroit tuberculosis clinic and for follow-up of patients discharged from hospitals, with very satisfactory results. They have also been used for several group surveys, and the results indicate that this comparatively inexpensive method of x-ray examination can be used for case finding in such surveys without preliminary tuberculin testing. In a group of 1425 women coming to the prenatal clinic, all were tuberculin tested and all were x-rayed; 144 women failed to return for a reading of the tuberculin test; in this group the x-rays showed 2 cases of active pulmonary tuberculosis. Of those who returned for a reading of the test, 610 gave a positive reaction; the x-rays showed 2 active cases of pulmonary tuberculosis

in this group, and also 2 active cases in those giving a negative reaction. The miniature x-ray films have recently been employed in a special clinic in a district with a high tuberculosis mortality without preliminary tuberculin testing. In twelve weeks, 4,815 persons were examined, and 76 active cases of pulmonary tuberculosis found. In addition a number of cases of non-tuberculous pulmonary disease and of cardiac disease were discovered, which are not of so much public health importance, but are of importance "to the individual concerned."

COMMENT

From the standpoint of cost alone, the use of miniature x-ray films, in surveys designed to detect early asymptomatic tuberculosis, is a procedure of value. However, it would appear that the physician-patient relationship might be improved if the tuberculin test were used as a preliminary to the screening process. Rarely do patients with clinically significant tuberculosis react negatively to a properly performed tuberculin test. As the infection rate among the population steadily drops, it may be that the tuberculin test will assume a more important place among case finding procedures.

F.L.M.

Antirabic Vaccination— Present Status

L. T. WEBSTER (*American Journal of Public Health*, 31:57, Jan. 1941) notes that in the past five years, there has been an increased interest in rabies. By means of the mouse diagnostic test devised by the author and his associates, rabies has been found to be more prevalent among dogs in certain American communities than has been supposed. For testing the potency of rabies vaccines a qualitative test has been devised at the Rockefeller Institute, which consists in testing the virulence of a given preparation by injecting it intracerebrally into mice, and by measuring its immunizing potency in m.l.d. by vaccinating mice with it and testing the vaccinated animals three weeks later with graded doses of virulent virus. This test has shown that commercial vaccines that contain virulent virus have considerable immunizing potency. Non-virulent phenolized prepara-

tions, for either human or animal inoculation, were found to have little immunizing potency (for mice). Non-virulent chloroformized vaccines were effective for immunizing mice, provided that "at least two times the stated dose was employed." These findings were checked by experiments on dogs, with similar results. The author is of the opinion that no virulent vaccine, "whether containing unmodified or modified virus, should be considered for mass vaccination, until efforts to produce effective, non-virulent preparations have failed." At the Rockefeller Institute laboratories, experiments are being carried out with vaccine containing a virus rendered non-virulent by exposure to ultraviolet light. Recently mouse brain has been employed as a source of the virus. The mouse immunization test has proved of value for testing the immunizing potency of rabies vaccines and "might well be used" as a basis for standardizing such vaccines. The author concludes that it is encouraging to find that several groups of workers "are developing and testing new preparations on the assumption that, given the proper material and technic, immunization against rabies with vaccines is a definite possibility."

COMMENT

The unsatisfactory status of mass immunization of dogs against rabies, and the not infrequent failures reported in humans, when vaccines are used, following exposure to the disease, tend to emphasize the importance of such experimental work as has been reported in this article.

F.L.M.

Prostitution as a Source of Infection with the Venereal Diseases in the Armed Forces

C. R. REYNOLDS (*American Journal of Public Health*, 30:1276, Nov. 1940) points out that during the last World War, the measures for control of venereal diseases already initiated in the Army were "intensified and extended." In general these measures are still in use in the Army and Navy. Of the various measures adopted the author is of the opinion that assumption of responsibility for the control

of venereal disease by "the immediate military commanders" and chemical prophylaxis have been the most effective. To be effective, however, chemical prophylaxis must be employed promptly after exposure to infection. In France the responsibility of the so-called regulated houses of prostitution for the spread of venereal diseases among American troops soon became evident, and in some instances these houses were placed "out of bounds" by the military commander. In the control of prostitution in the vicinity of military camps, the cooperation of the military commanders, the local and state authorities, and of the U. S. Public Health Service (in extra-military sanitation) is necessary, in addition to the aid of such organizations as the American Social Hygiene Association and "an awakened public opinion." There is "an inevitable tendency for prostitutes to assemble around military concentrations and to follow the troops with patriotic devotion," so that "without restraint the forces of prostitution can decimate a military command." Prostitution therefore should be recognized as a "Fifth Column" and "dealt with accordingly."

COMMENT

While commercialized prostitution is directly responsible for only a small proportion of venereal infections in civilian practice, the picture changes markedly when large numbers of men are gathered together in military encampments.

In the control of this menace, the cooperation of military and other federal services is important but the responsibility must rest with state and local authorities. Health services for localities in the vicinity of military camps should be augmented and both state and federal funds should be made available for this purpose.

F.L.M.

Administration of Pure Oxygen to Compressed Air Workers During Decompression

R. R. JONES, J. W. CROSSON and their associates (*Journal of Industrial Hygiene*, 22:427, Dec. 1940) report a study of the use of the inhalation of pure oxygen during decompression as a means of controlling compressed air illness. In the

first study three crews of 12 men each were given inhalations of pure oxygen for the last twenty minutes of each decompression period. These men were all volunteers from among tunnel workers and were "as representative a cross section of tunnel workers as could be desired" in regard to age, physical type, type of work, and experience in compressed air. In 3884 decompressions with oxygen inhalation over a period of three months with this group, no case of "bends" occurred. During the same period, in 15,904 decompressions by the usual method in the same lock, 21 cases of compressed air illness occurred. Subsequently decompression with oxygen inhalation was carried out with a larger group of volunteers from all crews of workers. These men were not as carefully instructed and supervised in the use of the oxygen inhalation apparatus as those in the smaller groups in the first study. In 11,196 decompressions with oxygen inhalation with this larger group, 23 cases of compressed air illness were reported, but 3 of these can be "discounted" on the evidence of the case histories. In the remaining 20 cases, the symptoms were all mild or moderate; 4 attacks occurred in one individual, who was obviously unfit for compressed air work. While the incidence of reported cases of compressed air illness was slightly lower in 9,462 decompressions without oxygen inhalation in the same period (12 cases), the evidence indicates that not all cases were reported in this group of workers; of these 12 cases, 5 were of a severe type. These findings indicate that with an efficient system of oxygen administration and proper supervision and education of the workers in the use of the apparatus, as a part of the decompression procedure, the incidence of compressed air illness can be much reduced, and "serious cases can be eliminated."

COMMENT

The results obtained in the closely supervised experimental group vary markedly from the experience observed when the same process is applied without adequate control over the technique employed.

While the findings would indicate that there is value in this procedure, further in-

vestigation should be made in order to evaluate properly other variables which enter into the picture.

F.L.M.



Vascular Basis of Uveal Disease

W. F. DUGGAN (*Archives of Ophthalmology*, 24:1123, Dec. 1940) maintains that iritis, iridocyclitis and cyclitis are "basically similar" to acute retrobulbar neuritis, acute exudative choroiditis and acute spastic closure of the central retinal artery or one of its branches. In all these lesions, the early changes are characterized by arteriolar constriction, capillary dilatation and increased capillary permeability, with resulting perivascular edema and round cell infiltration. The differences in these various lesions depend upon the type of tissue involved. On the basis of this theory, the author has treated cases of acute uveal disease (exclusive of choroiditis) by intensive vasodilator therapy. For this purpose he has employed intravenous injections of sodium nitrite. In some milder cases, a preparation that can be given by mouth may be used. At present, erythrityl tetranitrate seems to be best suited for oral administration. In the 11 cases of acute uveal disease reported, intravenous sodium nitrite was used. In several of these cases "the customary therapeutic procedures" had not been effective. The time required for clinical cure in these cases varied from five to fifteen days, averaging nine days. Recovery was somewhat more rapid in patients seen early and in those with a first attack. None of these patients were hospitalized, although 5 patients "would ordinarily have been hospitalized;" the average time of cure in this group was ten and six-tenths

days. Two patients might have been hospitalized; the average time of cure was eight and a half days. The other 4 patients would not ordinarily have been hospitalized; the average time of cure in this group was seven days. As more patients were treated, the use of mydriatics was decreased. Definite improvement did not become evident in these cases until two to three days after the vasodilator therapy had been instituted. Pain was the first symptom to be relieved, later tearing, photophobia and tenderness; exudates in the anterior chamber first disappeared, then edema of the iris, cells in the aqueous, vitreous haze and finally circumcorneal injection. Improvement in vision occurred as the exudates were absorbed and the vitreous cleared. Two patients had syphilis, but the eye lesions in these cases cleared up in five to nine days.

COMMENT

New ideas as to treatment of the conditions mentioned here are very common, which is proof that there is room for more successful remedies. The basis for this special therapy is entirely theoretical, which should be no reason for refusing to try the remedies recommended in appropriate cases. As a preliminary, an exact diagnosis is absolutely necessary. Data obtained are useless unless the exact type of disease treated is known.

R. I. L.

Spleen Extract in Glaucoma

M. GOLDENBURG (*Illinois Medical Journal*, 78:495, Dec. 1940) reports the use of spleen extract in the treatment of glaucoma, as suggested by Paul and Miller in 1937. Various dosages of the spleen extract were tried, and it was found that injections of 2 to 3 cc. were as effective as larger amounts. An injection of spleen extract very definitely lowers the intra-ocular pressure in some cases of glaucoma; the higher the original pressure, the more marked the effect of the extract. The pressure tends to rise again and repeated injections of the extract are necessary. These subsequent injections are not followed by the same rapid fall in pressure. However, the author has never observed the pressure reach its initial level after in-

jections of spleen extract in cases in which this level was high. In the cases with moderately elevated intra-ocular pressure, the reaction to the injection of spleen extract was not marked nor rapid; in some cases there was a delayed reaction. The spleen extract definitely enhances the action of pilocarpine and to a less extent that of eserine; it apparently acts as a synergist to these drugs. This is especially true in cases in which pilocarpine has been used for a long time and has "lost its earlier efficiency." The author concludes that while the action of spleen extract on the intra-ocular pressure is not always "predictable," it does definitely reduce the pressure in certain cases, and may be considered a valuable addition to the group of drugs that have this effect. Its greatest value may be found in its synergistic action with pilocarpine and eserine. In no case were any ill effects of the extract noted. In some cases in which the intra-ocular pressure was not reduced "to the desired level," the spleen extract injections resulted in "a feeling of ocular well-being and visual improvement."

COMMENT

Glaucoma is very common and difficult to control. Therapy is helpful in some cases but eventually most cases require surgery. The only way to determine the value of a remedy in this stubborn disease is repeated trial with careful observation and complete records. Any remedy with the slightest prospect of results is sure to be tried.

R. I. L.

Sympathetic Ophthalmia Treated with Sulfanilamide

R. C. GAMBLE (*American Journal of Ophthalmology*, 24:49, Jan. 1941) reported a case before the Chicago Ophthalmological Society in 1939, in which sympathetic ophthalmia developed in the left eye following a small penetrating injury to the right eye. Treatment with sulfanilamide or sulfapyridine resulted in the disappearance of the precipitates, but when the drug was discontinued, there was a tendency to recurrence. On the last examination, there was no congestion in either eye, a few small precipitates were present

on each cornea, and the media were "quite clear" in both eyes; the vision was 20/20 in each eye. The patient was still taking sulfanilamide, and "it seemed quite probable that the inflammatory process would eventually heal without destroying his sight." A few days after this last examination, the patient was killed in an accident. Postmortem examination of the eyeballs showed infiltration of the iris and ciliary body; one of the nodules in the iris of the eye that was the site of the sympathetic ophthalmia "definitely gave the impression of being in the healing stage." The media in both eyes were fairly clear, the pathological process being "quite definitely limited to the anterior segment." The author notes that sulfanilamide did produce clinical improvement and maintained normal vision for at least six months in this case of sympathetic ophthalmia. On the other hand, he states "it is disappointing to find so much active pathology in eyes which looked so well clinically, when it is fairly evident that the patient had had about as much sulfanilamide as could safely be given."

COMMENT

Sympathetic ophthalmia is a serious disease with such uniformly bad results that the sulfanilamide group will be given every possible chance to demonstrate its possibilities. The results of its use in this case justifies further trial.

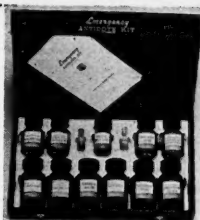
R. I. L.

The Use of Retrobulbar Proctocaine Anesthesia for the Relief of Intractable Ocular Pain

L. H. SAVIN and T. M. TYRRELL (*British Journal of Ophthalmology*, 24:560, Nov. 1940) report the retrobulbar injection of proctocaine in 18 cases of severe pain in the eye; in 11 cases the pain was completely relieved, in 5 cases partially relieved; in one of the 2 cases in which the procedure gave no relief, the injection was "faulty." Corneal sensibility was tested both before and after the injection in every case; usually it was somewhat lowered, but was never "completely

—Continued on page 146

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rationale of the surgical means em-
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greatest significance in surgical treat-
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GOOD NEWS! Böhler Being Reprinted!

Böhler— TREATMENT OF FRACTURES

By Dr. Lorenz Böhler, Director of the Hospital for Accidents, Vienna; Lecturer in Surgery, University of Vienna. Translation (1935) from the fourth enlarged and revised German edition, by Ernest W. Hey Groves, M.S., F.R.C.S., Emeritus Professor of Surgery, University of Bristol. Buckram binding, gold stamped, $6\frac{1}{2} \times 10\frac{1}{4}$, 588 pages, 1059 illustrations, original price, \$12.00, 1941 unrevised reproduction, \$10.00.

BEFORE the war we were arranging with Dr. Lorenz Böhler of Vienna for a new edition and translation of his famous work, but war conditions have made it impossible to carry out those plans at present. Meanwhile because of the widespread adoption of the Böhler methods in American hospitals and clinics, the profession, especially younger members, has been greatly handicapped for several years by inability to obtain copies of the current fourth German edition, edited and translated in 1935 by Ernest Hey Groves, editor of the British Journal of Surgery. Secondhand copies have been selling at a premium. Few owners would sell, the book being far too valuable to part with.

In response to insistent demands especially from physicians in or preparing for military service, we are now making a reproduction of the Groves translation of the fourth edition, to be available soon. *Send in your advance order now at \$10.00 per copy.* The original price was \$12.00. Let it be clearly understood this is not a new revised edition and with war conditions as they are it will probably be a long time before a complete

new revised edition can appear in English. Meanwhile, all the details and principles so very necessary to a proper understanding and successful carrying out of the Böhler methods can be found in the Groves translation, which includes later experience of Böhler with fractures of the spine and of the neck of the femur, than appeared in the fourth German edition. Before the war about 400 surgeons from many countries attended the Böhler Clinic each year. You cannot go now but you can get the essential information for \$10.00. If you do not have a copy this is your opportunity. The supply is limited. *Better order now.*

"Few books on the subject have presented the material as clearly and concisely as this one. Almost none has had the large number of beautiful and constructive illustrations. The book represents the outcome of the experience of nineteen years of treatment of more than 10,000 cases of fractures. When the history of fractures is written, Böhler's name will appear prominently, establishing a Böhler era or milestone. This book will rank high with all traumatic, orthopedic and general surgeons."—*Journal of A. M. A.*

"Few men are as well qualified to write on the treatment of fractures as Dr. Lorenz Böhler. The entire book is readable, logical, and honest, and to be recommended without reservation."—*Surgery, Gynecology and Obstetrics.*

"Whether agreeing with all of Dr. Böhler's methods or not, everyone treating fractures will want to, and in fact should, study this work thoroughly."—*American Journal of Surgery.*

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Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

Guide Book to Nutrition

Feeding the Family. By Mary Swartz Rose, Ph.D. Fourth edition. New York, Macmillan Company, [c. 1940]. 421 pages, illustrated. 8vo. Cloth. \$3.75.

THE fact that this book has gone into its fourth edition speaks its intrinsic value. As the title implies it is written especially for the layman, more specifically the housewife, who must plan the family board, and amidst the abundance of high-power food salesmanship must make decision as to what is essential in the food line. Chapters have been devoted to feeding the various age-groups from grandparents to baby. The emergencies of feeding the ill are adequately covered from the lay viewpoint. But let it not be concluded that this book is merely for the housewife; it will serve every purpose of the nurse not to mention the physician who is not making dietetics a specialty.

GEORGE E. ANDERSON

Study of Neonatal Defects

Congenital Malformations. A Study of Parental Characteristics with Special Reference to the Reproductive Process. By Douglas P. Murphy, M.D. Philadelphia, University of Pennsylvania Press, [c. 1940]. 98 pages, illustrated. 8vo. Cloth, \$2.00.

THIS little book of less than 100 pages contains the complete study material for Murphy's conclusions on the influence of various parental characteristics on the reproductive processes. It is perfect statistically. Malformations are extraordinarily frequent among siblings, whose congenital defects are apt to be identical. Murphy's work is outstanding. Obstetricians should see this book.

CHARLES A. GORDON



Classical Quotations

• I am inclined to think that the virus which is considered rabid may be accompanied by a substance which, by impregnating the nervous system, would make it unsuitable for the culture of the microbe. Thence vaccinal immunity. If that is so, the theory might be a general one: it would be a stupendous discovery.

Louis Pasteur.

From notes made at the Académie Française on Thursday, January 29, 1885.

Pelouze's New G. U.

Office Urology With a Section on Cystoscopy. By P. S. Pelouze, M.D. Philadelphia, W. B. Saunders Company, [c. 1940]. 766 pages, illustrated. 4to. Cloth, \$10.00.

THIS practical clinical work of some 700 pages is well written, well arranged, and rather fully illustrated. It is intended chiefly for the practitioner, but

should prove useful to the medical student, the graduate student, and those less experienced in the specialty of Urology. One is impressed with the large variety of diagnostic and therapeutic procedures included. The chapter on history-taking and examination of the patient is of paramount importance. Strictly speaking, much of the material may be considered of a hospital rather than an office nature. The author has made a useful contribution based on a wide experience and recognized attainment in the field.

AUGUSTUS HARRIS

Freudian Psychology

Psychology and Psychotherapy.
By William Brown, D. M.,
Oxon Fourth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 260 pages. 8vo. Cloth, \$4.75.

THE first portion of this book deals with various psychological concepts, essentially from a Freudian point of view.

Some of the succeeding chapters are particularly interesting in view of the present world conflict. There is a chapter on the psychoneuroses of war, and another on the psychology of peace and war.

The appendix contains three cases of war psychoneurosis, and the record of a deep mental analysis. There is a bibliography present.

For those interested in this field, the book makes excellent reading.

STANLEY S. LAMM

A Prominent Urologist's Career

Hugh Young: A Surgeon's Autobiography. New York, Harcourt, Brace and Company, [c. 1940]. 554 pages, illustrated. 8vo. Cloth, \$5.00.

IN appraising biography one may consider the reasons for which he reads it. First there is the desire for information on history, in which the subject participated. In this limited history of the development of urology, the protection of the army in France from venereal disease and other appropriate matters, Dr. Young was easily chief; you have this material here.

Also you are interested in the subject.

Dr. Young is an able surgeon whose work interests all medical men, perhaps for their personal futures; you like to know what kind of a man this is.

And as in all literature, if we mean what we read for culture, we would read biography as a novel because it is a pleasure.

In all these particulars this book is well written and we recommend it to all doctors. Frankness is a word much used—and abused—and broad or rough we would say in regard to advising this for the feminine and particularly juniors. The details of the subject matter would seem of little concern and less interest to these groups.

WALTER D. LUDLUM

Popular Mental Hygiene

Your Mental Health or Between Mental Health and Mental Disease. For Intelligent Laymen and Physicians. By B. Liber, M.D. New York, Melior Books, [c. 1940]. 408 pages. 8vo. Cloth, \$3.00.

IT is refreshing to have available a comprehensive popular treatise which comprises the common garden variety of mental and emotional difficulties for which the psychiatrist in private practice and hospital clinic is consulted. The author speaks from a wealth of experience in which over 200 brief case histories are utilized to demonstrate varying degrees of behavior difficulties from childhood through adolescence to maturity. The practical aspects are emphasized without delving into controversial theoretical considerations or technical terminology. It is one of the best books the reviewer has seen for the intelligent layman in which common sense psychiatry is kept to the front.

Doctor Liber published many of these articles in the New York State Journal of Medicine, as well as in other periodicals. Since 1904, when he began medical practice in New York City after having received his medical education in Vienna with subsequent post-graduate work in psychiatry in Paris, the author has delved

into the practical aspects of psychiatry from a broad public health point of view, as well as individualized therapeutic relationships in clinical and private practice. His seasoned comments on various topics, for example, the psychoanalytical approach and questionable results in many instances, make for a temperate and cautious attitude which is commendable. Herein the general practitioner will find a quick orientation to the core of psychiatric problems which confront him and how they may be helpfully understood and treated. The exceptionally wide range of table of contents brings into focus for practical discussion the common mental deviations of all age groups. A chapter on preventive psychiatry and the need for training in this branch of medicine is indeed timely. A pertinent glossary and adequate index round out the contents.

The publishers are to be congratulated upon the attractive format and the easy readability of print on unglossed paper which gives a realistic appreciation of "Melior" book craft. This contribution deserves a very wide reading.

FREDERICK L. PATRY

Famous American Medical Men

American Doctors of Destiny. A Collection of Historical Narratives of the Lives of Great American Physicians and Surgeons Whose Service to the Nation and to the World has Transcended the Scope of their Profession. By Frank J. Jirka. Chicago, Normand House, [c. 1940]. 361 pages, illustrated. 8vo. Cloth, \$3.75.

THIS book portrays short biographical sketches of medical men who not only played important roles in the field of their profession but also participated in many other activities. The lives of these doctors are filled with an expression of patriotism and general philanthropic tendencies toward the poor and the unfortunate sick. A number of certain similarities stand out prominently among all of them; their tireless devotion, unselfish spirit, their painstaking solicitude, their deep sympathy and understanding. In a number of incidents, the medical men, both the living and the dead, forsook all thought of monetary gain, and sacrificed not only their personal wealth, their health, and comforts but even their lives, while making discoveries and

innovations in the progress of medicine or in active performance of their duties to their country.

This book is ably written and beautifully edited. The reproductions of the portraits are executed by Raymond Warren. This book is highly recommended.

WILLIAM RACHLIN

Arey's Latest Embryology

Developmental Anatomy. A Textbook and Laboratory Manual of Embryology. By Leslie B. Arey, Ph.D. Fourth edition. Philadelphia, W. B. Saunders Company, [c. 1940]. 612 pages, illustrated. 4to. Cloth, \$6.75.

THE author has succeeded admirably in placing man "in the embryological spotlight." The inclusion of lower animal material has been held to the essential minimum and is so handled as to lead to no confusion. Most outstanding feature is the many excellent and well chosen illustrations numbering over thirteen hundred. The discussion is clear, concise, and peppered with references. Bibliography is adequate. Best sections concern the formation of mesenteries, the omental bursa, and rotation and fixation of the intestine; the development of the heart and arteries; and the story of brain development. If the book has a fault it lies in insufficient correlation between developing and adult structures. Even in this respect, however, the author goes well beyond the average text. In the opinion of the reviewer it is the finest textbook of human embryology available to medical students or to a practitioner desiring to keep abreast of present day embryology.

GEORGE H. PAFF

A Patient Jokes About His Bowels

Saved by the Bell. By David H. Church. Richmond, Virginia, The Dietz Press, [c. 1940]. 28 pages, illustrated. 8vo. Cloth, \$1.00.

THIS is really a pamphlet, rather overdressed in book form, describing frivolously and, at times, humorously, the patient's dependence on the bell and the ever ready hospital orderly. The urgency and the insistence of the intestinal functions are playfully described by the author, while to the illustrator, James Birnie, jr., falls the duty of depicting

measures and means to meet these emergencies. The bed-pan, rampant and couchant, looms large in cure and convalescence. Other aspects of a hospital patient's life are briefly and facetiously discussed. The author is evidently appreciative of the treatment he had received and closes his short account with:

Doctor, surgeon, orderly, nurse,
Best old sports in the universe
Pay no mind to the author's jest
He's a feeble-minded cuss at best.

JOSEPH RAPHAEL



Guide Book for the Mother-To-Be

Expectant Motherhood. By Nicholson J. Eastman, M.D. Boston, Little, Brown and Company, [c. 1940]. 176 pages, illustrated. 12mo. Cloth, \$1.25.

DR. EASTMAN, Obstetrician to the Johns Hopkins Hospital, has written a most practical book intended for the instruction of the expectant mother or mother-to-be. It answers such questions concerning prenatal care and labor that an intelligent patient is likely to ask. The information is given in a simple and interesting manner, and the average woman should find it enjoyable reading. The physician who can afford little time for the instruction of his patient in adequate prenatal care can accept this book as a valuable adjunct, and it is recommended that patients be advised to secure it. With its aid time may be devoted during visits of the patient to the particular circumstances of the individual case, and yet one may feel assured that competent medical care is being given.

The author disproves the commonly accepted superstitions and false beliefs concerning pregnancy and labor. Throughout the book he is careful to emphasize the need of the medical attendant. Of the numerous books that have appeared in this field, this work is beyond question one of the best.

ALEXANDER H. ROSENTHAL

Digest of Important Public Health Problems

The 1940 Year Book of Public Health. Edited by J. C. Geiger, M.D. Chicago, The Year Book Publishers, [c. 1940]. 560 pages, illustrated. 12mo. Cloth, \$3.00.

ADVANCES in the field of public health are so rapid that a year book on this subject in which are recorded the salient features over a twelve months' period, is very welcome.

The private practitioner will be particularly interested in abstracts on the communicable diseases, especially syphilis. Nutrition is another subject which deserves attention by physicians in private practice; also, dental hygiene and mental hygiene.

This addition to the Year Book series should prove of definite value.

A. E. SHIPLEY

Management of Bone & Joint Injuries

Fractures and Dislocations for Practitioners. By Edwin O. Geckeler, M.D. Second edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 314 pages, illustrated. 8vo. Cloth, \$4.00.

THIS compact and comprehensive book deserves wide popularity because of the emphasis placed on the simple direct approach to the handling of fractures and dislocations. The practitioner, and those especially interested in traumatic surgery, will find a ready solution to most of their problems presented in a concise, yet thorough and practical manner.

The illustrated drawings and photographs of fundamental principles and technique clearly and graphically augment the text. Sufficient stress on anatomical and mechanical principles serve as a basis for a clearer appreciation of the underlying pathology and treatment. The author discusses pertinent symptoms, treatment, and complications of the more common fractures and presents them so concisely as to leave no doubt as to the proper method of treatment.

An excellent feature is the inclusion of a few pertinent references to recent periodicals and modern books at the end of each chapter. This should stimulate and acquaint the student and practitioner to peruse the current literature.

IRWIN E. SIRIS

Holt's Latest Pediatrics

Holt's Diseases of Infancy and Childhood. A Textbook for the Use of Students and Practitioners. By the late L. Emmett Holt, M.D., and John Howland, M.D. Revised by L. Emmett Holt, Jr., M.D., and Rustin McIntosh, M.D. Eleventh edition. New York, D. Appleton-Century Company, [c. 1940]. 1421 pages, illustrated. 8vo. Cloth, \$10.00.

This revised edition can be called without fear of serious contradiction the finest single textbook in pediatrics to date. A large number of physicians who have done special work in pediatric subjects have collaborated with the authors in rewriting many chapters. This blending of ideas has been done without distorting either the size of the book or the style of the text.

In carefully reviewing the subject matter the keynote of authority strikes home most forcibly, and it is just this type of book one desires for quick reference whether he be student or practitioner.

To analyze the new features would be futile in this review so we shall merely

mention a few examples of the changes from the previous edition. The chapter dealing with the newborn has been rearranged and rewritten. Valuable tables and illustrations have been added. A concise chapter on the eye should have been included long ago.

The reasons for a conservative attitude in removal of tonsils are to the point and should be read by every physician who treats children. The same is true of the chapter on the thymus. Many, many, too many thymuses are diagnosed and treated as the cause of respiratory obstruction.

The latest developments in prophylaxis and treatment of acute infectious diseases enhance the value of the volume. A better classification and discussion of congenital heart disease is noted.

To anyone treating children desiring to keep his library up to date with worthwhile books, this edition is highly recommended.

THURMAN B. GIVAN

BOOKS RECEIVED *for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.*

Diagnosis and Treatment of Menstrual Disorders and Sterility. By Charles Mazer, M.D., and S. Leon Israel, M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 485 pages, illustrated. 8vo. Cloth, \$6.50.

Special Surgery in Wartime. "The Practitioner" Booklets. By D. W. C. Northfield, Douglas McAlpine, V. Zachary Cope, and others. London, E. C. 4, Eyre & Spottiswoode, 6 Great New Street, [c. 1940]. 74 pages. 8vo. Cloth, 6s.

Modern Diagnosis. The Practitioner Handbooks. Edited by Sir Humphrey Rolleston and Alan Moncrieff. London, E. C. 4, Eyre & Spottiswoode, 6 Great New Street, [c. 1940]. 286 pages, illustrated. 8vo. Cloth, 12/6.

From Thirty Years with Freud. By Theodor Reik. Translated by Richard Winston. New York, Farrar & Rinehart, Inc., [c. 1940]. 241 pages, illustrated. 8vo. Cloth, \$2.50.

L. Emmett Holt: Pioneer of a Children's Century. By R. L. Duffus and L. Emmett Holt, Jr. New York, D. Appleton-Century Company, [c. 1940]. 295 pages, illustrated. 8vo. Cloth, \$3.00.

Diagnosis and Treatment of Arthritis and Allied Disorders. By H. M. Margolis, M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 551 pages, illustrated. 8vo. Cloth, \$7.50.

Clinical Pellagra. By Seale Harris, M.D. St. Louis, The C. V. Mosby Company, [c. 1941]. 494 pages, illustrated. 4to. Cloth, \$7.00.

The Alcohol Problem Visualized. Chicago, The National Forum, 417 S. Dearborn Street, [c. 1940]. 96 pages, illustrated. 4to. Paper, 75c.

The Merck Manual of Therapeutics and Materia Medica. A Source of Ready Reference for the Physician. Seventh edition. Rahway, Merck & Company, [c. 1940]. 1436 pages. 12mo. Cloth, \$2.00.

A Textbook of Clinical Neurology. By J. M. Nielsen. M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 672 pages, illustrated. 4to. Cloth, \$6.50.

How to Prevent Gout. By Israel Bram, M.D. New York, E. P. Dutton & Company, [c. 1941]. 182 pages, illustrated. 8vo. Cloth, \$2.00.

Accident and Health Insurance. By Edwin J. Faulkner, M.B.A. First edition. New York, McGraw-Hill Book Company, Inc., [c. 1940]. 366 pages. 8vo. Cloth, \$4.00.

Men at Their Worst. By Leo L. Stanley, M.D. New York, D. Appleton-Century Company, [c. 1940]. 322 pages, illustrated. 8vo. Cloth, \$3.00.

Plague on Us. By Geddes Smith. New York, The Commonwealth Fund, [c. 1941]. 365 pages, illustrated. 8vo. Cloth, \$3.00.

Aurora Institute Lectures

THE Aurora Institute, Morristown, N. J., will resume a series of lectures this year with an interesting and informative talk on "The Management of Diabetes" by Dr. H. O. Mosenthal, Clinical Professor

of Medicine and Attending Physician at Post Graduate Hospital, New York. The paper will be delivered on Sunday, March 30th at 5 P. M. at the Aurora Institute.

Advance arrangements have also been made for a lecture by Dr. Foster Kennedy,

Professor of Neurology at Cornell University Medical College and Director of the Department of Neurology at Bellevue Hospital, who will talk on "The Inter-

Relationship of Mind and Body," on Sunday, May 18th.

There will be a general discussion from the floor at the conclusion of each meeting.



CULTURAL MEDICINE

Three Thousand Years of Pharmacy and Medicine

LeGrand Kerr, M.D.—

—Concluded from page 126

are some curious and interesting statements in the Salernian treatises regarding the doctor's conduct toward his patient. "Entertained by the family, his remarks at the table are to be punctuated by continued inquiries regarding his patient, whose condition he must regard as grave in order that either a favorable or a fatal termination might redound to his credit." Before continuing this ancient advice I suggest that you take the matter calmly without a twist or wiggle. Evidence of concern might create suspicion among those sitting close to you. "The doctor must never impair his professional standing by flirting with his patient's wife, her daughter or maid servants." Treatment by placebo was not alone permitted, but advised, in order "that the patient might feel that he was getting his just dues." One authority advised that "if the patient showed signs of ingratitude, he might be made temporarily ill, by judicious doses." The modern method might be a generous amount of castor oil for those who failed to pay their bills; it might make them "cough up." But, on second thought, would they dare to cough?

IN 1210 a guild of surgeons was formed at Paris. Surgeons of the long robe were barber surgeons, who possessed some education. Surgeons of the short robe were restricted to blood-letting and the treatment of ordinary wounds. The red and white decorations on the modern barber pole are emblematic of the blood and bandages for which the barber shop was noted.

This sketchy review of the past would be wasted if it did not carry some constructive thought for the present. Human nature has remained constant for centuries. Whatever change has occurred in the ambitions, the intrigues and the dealings of man to man has been the result of education and circumstance rather than of time. It is hard to admit that many of the weaknesses and inhumanities of the ancients chart our own course today. Our self-love and pride are revealed by our instinctive, automatic excuse-making. We cannot afford to play ostrich. "We can do nothing against the truth, but for the truth." When we tear out a weed, we leave space for another weed, unless we stop long enough to replace it with flower or grain. In medicine we must tear out the weeds, the untruths, but before we start we should be prepared to replace the wrongs, the untruths, with something better; whether we are dealing with an individual, a colleague, our medical society or our profession as a whole.

462 CLINTON AVENUE,



CONTEMPORARY PROGRESS

—Concluded from page 138

absent" after the injection. In cases where the corneal sensitivity is lowered when the

injection is given, the patient should be kept under careful observation, although the authors have not seen any instance of neuroparalytic keratitis following the retro-

bulbar injection of proctocaine. In 2 cases diplopia followed the injection, but cleared rapidly. This occurs only when vision is good in the painful eye and patients should be warned of this possibility in such cases. Only 1 cc. of proctocaine has been used for retrobulbar injection; proctocaine was employed because it is the only preparation readily obtainable that gives prolonged anesthesia. It was originally designed for rectal and anal anesthesia, and "modifications of its constituents" might give a better solution for orbital use. If proctocaine is used for relief of pain in a blind eye, the possibility of a neoplasm should be definitely excluded. In the one case in which this was not done, pain was not relieved (fortunately, the authors note), and enucleation was necessary, which showed a small melanoma of the choroid with secondary glaucoma.

COMMENT

There is a small group of painful blind eyes that should be considered as favorable for this treatment. The long established custom of removing the blind eye to avoid pernicious effects upon the other is so sound that the least doubt as to the diagnosis makes enucleation imperative. The authors have emphasized this point very properly. As most of these cases come to the oculist in the late stages, with an imperfect history, it is not likely that any large number of cases will be injected with proctocaine or any similar agent. The authors have done well to bring this to the attention of the profession.
R. I. L.

Conjunctivitis in Erythema Exudativum Multiforme

M. P. KOKE (*Archives of Ophthalmology*, 25:78, Jan. 1941) defines erythema exudativum multiforme as "a specific disease of unknown cause" which involves the skin and mucous membranes. Conjunctivitis is a fairly common complication, and may be so severe as to result in corneal involvement, blindness or even loss of the globes. The author reports 3 cases of conjunctivitis complicating erythema exudativum multiforme. One of these patients had had two similar attacks previously,

but of a less severe type without ocular complications. In all these cases the corneas remained clear, and no permanent damage to the eyes resulted. In the first case, there was copious mucopurulent discharge from the eyelids, which were red and swollen; the conjunctiva was chemotic over the eyeball, edematous in the fornices and "beefy red" on the lids; pseudomembranes later formed on the palpebral conjunctiva and finally on the bulbar conjunctiva; the palpebral pseudomembranes were stripped off; there was little bleeding until the following day. As the edema of the lids and the discharge subsided, thin adhesions formed between the palpebral and the bulbar conjunctiva, which had to be repeatedly broken down, but the conjunctiva eventually healed with no shortening of the conjunctival sac. In the second case, the palpebral conjunctivas were chiefly involved; there was a vesicle on the lower lid of each eye; the bulbar conjunctivas were merely injected. In the third case the bulbar conjunctivas were normal; the palpebral conjunctivas "mildly inflamed" and covered with a catarrhal exudate with two "small crusted lesions" on the lids of each eye. Cultures and animal inoculations "failed to reveal an etiologic agent." The skin and mucous membrane lesions in these cases were typical of erythema exudativum multiforme. The author notes that the pseudomembranous type of conjunctivitis is the most serious of the common ocular complications of erythema exudativum multiforme, and almost invariably results in corneal involvement; in his case of this type, however, the corneas remained clear throughout the course of the disease.

COMMENT

There are a number of diseases of the eye that are definitely infectious and from which an infecting agent can be carried from one eye to another in test animals. Herpes is an outstanding example. Other diseases, like smallpox, chickenpox, sleeping sickness, impetigo contagiosa, multiple sclerosis, poliomyelitis and acute myelitis are believed to be virus diseases and some of these have been quite certainly demonstrated to be of that type.
R. I. L.

Dietetic **DIGEST**

THE increased importance of the field of nutrition has prompted a review of the progress of the medical sciences in dietetics and nutrition. Each month in these pages is presented the current literature in this field, abstracted by Madeline Oxford Holland, D.Sc.

Peptic Ulcer Therapy

BRUSCH and Brusch in the *Review of Gastroenterology* (7, 471 (1940) #6) reports that ulcer is one of the most common lesions of the stomach and upper intestine. Thirty-four representative cases of peptic ulcer are reported in which larostidin was used alone or in conjunction with diet-alkali-vitamin therapy.

Larostidin, or histidine monohydrochloride, has no effect upon the quality though capable of lessening the quantity of gastric secretions. It is analgesic as well as antiemetic, occasionally reduces the blood coagulation time, is easily absorbed, and is followed by practically no systemic reaction. Because larostidin possesses these properties it is valuable as an adjunct in peptic ulcer therapy. Prompt amelioration of pain in histidine therapy is most clearly demonstrated where other forms of medication must be discontinued temporarily. Intramuscular injections of larostidin are accepted without complaint, provide more rapid relief from symptoms, and are convenient of administration. The intravenous use of certain lipoproteins now on the market has not proved satisfactory.

Parenteral therapy itself is effective in producing beneficial psychogenic response. Six to 24 injections, administered according to various schedules, quickly relieved symptoms and resulted in a gain in weight. There are no untoward reactions from the

use of larostidin. Patients who received the treatment felt that something really helpful was being done for them, and were willing to return for frequent observation.

Colloidal aluminum hydroxide, alone or with kaolin, and magnesium trisilicate have been found to be superior as adsorptive substances over other alkalies.

The modified Sippy diet has been found to be particularly deficient in calories, iron, protein, carbohydrates, liver and vitamins.

The authors state the belief that the combined treatment for peptic ulcer is definitely superior to any single remedy.

A deficiency in protein causes a lack of the amino acids which are necessary for the growth and repair of cells. Such deficiency is countermanded by a high protein diet and plain gelatin with histidine monohydrochloride parenterally to supply the system with the necessary histidine which the liver may have destroyed. The gelatine acts by aiding in the diminishing or eliminating the use of alkalies which retard catalytic reactions as well as carbohydrate metabolism. Emulsification of fats, digestion of milk casein and flow of bile are all facilitated by the colloid character of gelatin. Over-acidity of the gastric juices is neutralized by the amphoteric character of gelatin.

When milk is a part of the diet and the patient does not respond satisfactorily he may be allergic to milk.

—Continued on page XVIII

EDITORIALS



Sir Frederick G. Banting
1891-1941

A DIABET-ic boy of fourteen received the first injection of insulin on January 11, 1922. "This resulted in immediate improvement. The excretion of sugar . . . became much less . . . the acetone bodies disappeared from the urine. The boy became brighter, more active, looked better, and said he felt stronger" (*Canad. M. A. J.* 12:141-146, March, 1922).

Society pays too high a price for war when such men fall. Such a death symbolizes, for the intelligent and civilized, much that can not be voiced in protest.

Genius Versus Marble Walls

IT has been well said by Doctor Jean A. Curran that "We must not lose sight of the fact that not infrequently the great discoveries are made by men working closely with the practical problems of caring for the sick, and without extensive laboratory resources. That was true of Robert Koch and, more re-

cently, of Banting and Best in their discovery of insulin."

Which serves to recall Corrigan's work on the heart in his six-bed Dublin hospital.

The best brains are not necessarily ensconced within marble walls.

The small research centers deserve more encouragement than they receive.

We love to see the great institutes, with unlimited endowments, "beaten to it" by the small and obscure centers. We make no apology for this shameless avowal.

Potential benefactors and founders with an element of the sporting instinct in them as well as the usual commendable aims would do well to look about them a little.



The Ramparts We Watch

RAPPAPORT, Mayer *et al.* predict that the young men now being inducted into military service are under the threat of enhanced susceptibility to a form of

tuberculosis of increased severity. This situation must be met preventively in some new way. "It will not suffice to eliminate the potentially tuberculous recruit by x-ray survey at entry." The *continued* systematic prevention of tuberculosis in the Army is the real task.

These views are based upon present epidemiologic trends, particularly the decrease in tuberculin sensitiveness in the rising generation of young people. These tuberculin-negative young adults, when exposed to such contact as military conditions make inescapable, develop pulmonary tuberculosis more frequently than do tuberculin positives.

This evanescence of tuberculin sensitiveness is believed to be due to an attenuated type of first infection not productive of the old type primary complex—or let us say productive of a type tending to heal promptly and completely. Following such an event the second exogenous reinfection acts to rekindle allergy very abruptly and the lesion resulting therefrom tends to be of a predominantly infiltrative type with a marked tendency toward early caseation. "This lesion produced by exogenous reinfection is more severe in character than is the chronic productive type of tuberculosis still prevailing in the older age groups which is usually of endogenous origin."



The Ghostwriter Has a Rival

THE National Research Foundation for Eugenic Alleviation of Sterility, reporting on artificial insemination in the United States, cites 5,728 successes "using husband" and 3,510 "using donor."

The physicians successfully invoking artificial insemination numbered 4,049. As many as twenty-one inseminations were sometimes necessary (124 cases). One physician reported success after seventy-two attempts. The largest group (4,312) required twelve inseminations. Only three

pregnancies resulted after one insemination and seventeen pregnancies after two inseminations.

The "ghost" in this technic fascinates us. From whence is this unknown "stud" recruited? Can he by any chance be, at times, a medical student?

What fees are charged for these devoted services? Ah, here is a field for scrutiny.

What about the manner of reporting "donor" births? Does the birth certificate report the name of the putative or real father? In the former case is not the record a fraudulent one?



Underground Hospital at Basle, Switzerland

BASLE, ancient Swiss border town, has just completed a subterranean hospital which combines the very latest equipment for the nursing of the sick and wounded. The building has been planned in accordance with the principles governing fortress architecture and is expected to be strong enough to resist the heaviest of bombs. It has four exits.

The underground hospital is primarily intended for persons wounded or poisoned by gas in warfare. It will be able to treat an average of 500 slightly wounded patients and is adequately equipped for about 180 operations per day. The hospital has a special plant which in case of emergency can furnish light, heat, hot water and fresh air. Cost of building and equipment of the hospital was approximately 800,000 Swiss francs.

Surgery of the

COLON, SIGMOID AND RECTUM

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CANCER of the lower bowel, the rectum in particular, is one of the most frequently encountered human neoplasms. Moreover, its incidence is undoubtedly increasing, though perhaps this increase is no greater than that now being observed in all types of cancer. Like cancer of the stomach, that of the rectum is common to both sexes, so that its incidence is greater than that of such growths as epithelioma of the uterine cervix or carcinoma of the prostate.

Relatively neoplasms of the colon are rare, if we compare them with those of the rectum and rectosigmoid. This wide difference in incidence is somewhat hard to explain; but for those who accept the theory that all malignant growths are the result of trauma, it can be accounted for by the harsher character of the bowel content the lower it descends in the alimentary tract. Yet carcinoma may be found in almost any portion of the intestinal tube. Besides the rectum and the sigmoid flexure, these growths are seen with fair frequency in the cecum and at the hepatic flexure, while still more rarely they appear

in the transverse and the ascending colon.

WHEN one recalls the anatomy of the lower bowel and its relation to the other contents of the abdomen, as well as to the organs within the pelvic space, some of the difficulties attending surgery of a malignant growth in colon, sigmoid or rectum will be readily appreciated. To these must be added the dangers of doing any sort of operative intervention upon an enfeebled or elderly subject, for the victims of rectal cancer are nearly always much depleted from long inability to empty the bowel properly or continue a sufficient intake of food. Like the great majority of cancer subjects, those whose lesions are in the rectum are usually of middle age or past it.

Cancer in any part of the intestine often causes obstruction, while secondary infection results in ulceration, so that a malignant lesion presents a technical problem to the surgeon which does not greatly differ from that offered by such acute conditions as ruptured or gangrenous appendicitis or cholecystitis.¹ The picture most often seen after exposing a growth in the sigmoid or pelvic colon is one of ex-

¹From the Department of Surgery, De Courcy Clinic.

tensive ulceration of the adjoining mucous membranes, with partial or complete obstruction of the lumen of the bowel above where the cancer is situated. Any plan of operation must of necessity give full consideration to such complications, for all too frequently success or failure of the operation is bound up with the surgeon's decision.

DURING the past five years we have made it the practice of our clinic, whenever possible, to divide interventions upon the abdominal contents into two stages. In very early cases with a patient who is not senile and in fair general condition, these precautions may not be necessary. And in far advanced conditions, where secondary infection has brought about great destruction of tissue, with perhaps conditions similar to those witnessed with a gangrenous appendix or gallbladder, the delay which a two-stage operation imposes may be too dangerous. But between these two extremes we have found that a preliminary decompression and cleansing of the bowel is ordinarily of the greatest advantage—to physician and patient alike.

DECOMPRESSION of the bowel can be effected through a small enterostomy opening, into which is introduced a Pezzer catheter, which is fixed in position by two pursestring sutures of fine linen. Through this catheter the necessary fluids for irrigation and cleansing can be introduced readily to any part of the lower bowel, although its chief purpose is to prevent distention of the bowel with its almost inevitable sequel of intestinal paralysis. If the cancer patient is badly dehydrated, his fitness for the later stage procedure can be greatly enhanced by such intensive treatment as the Murphy drip or the introduction of glucose injections through the enterostomy opening. Such treatment is especially advantageous when the growth is located high up in the lower bowel, for lesions in the rectosigmoid or lower in the rectum proper necessitate intervention so low down that the tendency will be for the bowel to excrete promptly anything which may be introduced below the artificial opening.

Those who are opposed to two-stage operations declare that they can obtain decompression and cleanliness quite as well by the use of repeated doses of magnesium sulfate and frequent colonic irrigations during the four or five days preceding operation. In other words, they are just as much impressed by the necessity of preoperative preparation but believe it can be done without surgical intervention upon the bowel previous to the actual excision of the growth. These same opponents of two-stage procedures claim that the delay gives a double chance for complications to be set up, especially in elderly patients; that embolism, pneumonia and the similar sequelae of operative interference which we dread especially for our elderly patients very often follow comparatively trivial operations. These contentions undoubtedly have a firm basis in fact, and the possibility of complications after even the simplest enterostomy should always be kept in mind.

ON the other hand, shock is one of the greatest hazards of abdominal operation. The more extensive the procedure, the greater is the likelihood of the occurrence of shock. The preliminary enterostomy makes the main procedure less extensive and thus divides the risk instead of doubling it. We have found, too, that a certain degree of immunity is conferred upon the peritoneum by this preliminary handling. Animal experiment has shown that the tissue reaction occasioned by the mere exposure and slight handling of the intestines confers upon those tissues an added resistance to infection when they are exposed to it a second time.

In general it would seem that in expert hands, with a very careful selection of cases, the single-stage operation may be advisable. But for the average general surgeon, doing a limited amount of abdominal work, the two-stage procedures would seem preferable. Every case must, however, be considered on its own merits, and under all circumstances the needs of the patient should be placed before the preference or convenience of the surgeon. No matter

what procedure is selected, except in cases of acute obstruction where relief is imperative, the patient should have a period of preoperative preparation lasting a week or even longer. Financial considerations often hinder the carrying out of this plan, but the great need of such preparation and its recompense in shortening the period of convalescence and increasing the chances of complete recovery should be impressed upon the patient and his friends.

THE preparation should be just as thorough for the first stage enterostomy as if the entire procedure were to be done at once. Blood transfusion has proved very useful to us. Administered before operation it counteracts anemia—from which the majority of cancer patients suffer—while postoperatively it combats shock, especially in cases where considerable hemorrhage has occurred. Particular attention should be directed toward maintaining liver efficiency. Intravenous or subcutaneous introduction of glucose solution, in addition to a dietary high in calories but with little residue, will help to keep the liver working satisfactorily.

"Liver deaths"—those fatalities which sometimes take place after intervention upon the biliary tract, being characterized by persistent postoperative rise of temperature but otherwise showing little that is abnormal—may take place not only after cholecystectomy but following other operations upon the abdominal contents. The intestinal cancer patient is quite as liable as any other subjected to operation to succumb to such a hyperpyrexial death, and it is most essential that active measures should be instituted to forestall any such postoperative accident.

THE precise cause of liver deaths is still obscure; but I have elsewhere² given it as my opinion that infection, intestinal intoxication and, most of all, anemia are the principal etiologic factors, when these are added to the strain which operation imposes upon the patient. Building up the liver's glycogen reserve not only serves to protect it from injury by the toxic products originating at the site of the malig-

nant neoplasm, but also increases the liver's ability to carry on its peculiar detoxifying function. The preoperative administration of glucose will accomplish this, so this precaution should never be omitted. If anemia or a deficient hepatic blood supply already exists, the free use of glucose may turn the tide in the patient's favor, when without it the results of operation would inevitably be unfavorable. Certainly, until we have more accurate tests for liver function, glucose administration should be routine before any kind of major surgery.

CANCER of the cecum usually induces an anemia more pronounced than that which we are accustomed to see accompanying cancer elsewhere in the large bowel. This is, in all probability, due to the greater activity of the glands of the intestinal mucosa in this section of the bowel, induced by the more liquid condition of the intestinal content at this point. This activity naturally is reflected in more blood loss when the malignant lesion reaches the stage of secondary infection and ulceration. This is, in my opinion, an added argument for employing the two-stage procedure for any resection of the large bowel from the ileocecal junction to the hepatic flexure. Ileocolostomy should be the first step, to be followed two or three weeks later by resection.

The decision as to suitable procedure must, of course, be reached only after complete examination, and will depend, first of all, upon the part of the large bowel where the malignancy proves to be located—whether in colon, sigmoid or rectum. The subjective symptoms and the signs of mucus, blood and pus in the stool, more or less pronounced anemia, and other physical indications of malignant growth, should indicate the need of digital exploration, proctoscopic inspection, and roentgenography of the opaque meal or enema. Because early rectal growths are often missed by the x-ray, the digital and proctoscopic inspection of this section of the bowel should be especially thorough. But it should not be forgotten that, if digital and proctoscopic examina-

tion fails to give an explanation of the findings in the stool, it may be the x-ray which will not only reveal the location of the growth itself but will also serve to differentiate it from non-malignant inflammatory conditions, such as diverticulitis or ulcerative colitis.

ANOTHER decision of importance before undertaking resection of the bowel for carcinoma is the method of anesthesia to be employed. "Bad risk" patients should not be subjected to spinal anesthesia, particularly if they are profoundly anemic from hemorrhage or other cause. But where there are no other contraindicating circumstances, spinal anesthesia is regularly used in our clinic for any operation to be performed below the umbilicus. We have found procaine to be the most suitable drug for this purpose, using 1 cc. of spinal fluid to dilute it, irrespective of the amount of the drug we propose to employ. Fractional dosage, using just as little as will induce insensibility in the tissues to be operated upon, greatly increases the patient's safety and makes it possible to employ the method when the older practice of using one large dose would be prohibited.³

Technique

RESECTION of the large bowel at any point between the hepatic flexure and rectosigmoidal junction should, in our opinion, be invariably preceded by cecostomy. This relatively simple procedure decompresses the bowel and permits of cleansing irrigations, as has already been described. For some time now I have abandoned the classical Mikulicz operation for the two-stage cecostomy-resection, because in this way a more complete eradication of the new growth is possible. It is essential to remove not only the growth itself but also the mesenteric glands which drain the malignant region, and this cannot always be done if the Mikulicz technique is followed.

If a slight contamination of the wound occurs during the second or resection stage, the fact of a preceding cecostomy lessens the danger of infection by a sort of "vac-

ination" of the peritoneum, as has already been explained. The various "aseptic" methods of resection which have been recommended from time to time have never proved successful in our hands.

If the growth to be extirpated is located in the rectum, we follow the Miles technique, which is applicable to either one or two-stage procedures, although we prefer to do a cecostomy or colostomy from two to twelve weeks prior to the main operation whenever possible. An exploratory midline incision is first made, through which the exact site of the tumor is located and the possibility of resecting it determined. We are thus able to find out whether or not the tumor is freely movable, how extensive is the glandular involvement (if any), whether there are metastatic deposits in the liver or other adjacent viscera, or any independent growths in the general vicinity.

The colostomy is carried out at the midline in preference to locating it in the inguinal region, as is more generally practiced. The end of the bowel is brought out through the original midline incision. This is allowed to remain open until the patient has been thoroughly prepared for the major part of the operation, this period sometimes being as long as ten or twelve weeks, depending upon circumstances. When the abdomen is re-opened, we do not necessarily go in at the same point as at the first stage, for the findings at the initial investigation often show us that a better approach can be accomplished elsewhere.

Statistics

EIGHT cases of cancer of the cecum have been treated by the above-outlined technique, six being resected, while two patients could have a short-circuiting procedure only. There was no immediate mortality and operability of cancer of the cecum in this small series is thus 75 per cent.

Of twelve cases of cancer of the sigmoid in which it was found possible to resect the bowel and restore its continuity after a preceding cecostomy, there were two deaths—16 2/3 per cent. One patient

died of pneumonia the tenth day after the second stage operation. The other death was due to peritonitis and autopsy revealed a leak caused by too great tension of the anastomosis.

Only twenty of the forty patients treated for *cancer of the rectum* were in such condition that complete resection was possible—making the operability 50 per cent. Of these twenty operations two were done at a single session, the remainder being two-stage procedures. One of the "one-stage patients" died of peritonitis on the third postoperative day, and another died of recurrence within four years. We also lost two patients among those who had operation in two stages—one of pneumonia on the seventh postoperative day and the other in shock, immediately following the second intervention. The mortality of the last sixty cases of cancer of the lower bowel in which I have operated is, therefore, exactly 10 per cent. This compares

very favorably with the statistics of other clinics handling this peculiarly difficult and fatal lesion.

Conclusions

IN cancer of the lower bowel thorough preoperative preparation greatly increases the patient's chances of life and complete relief.

When no contraindications exist, a two-stage procedure is the preferable operation. The resection is to be preceded by an enterostomy, preferably in the cecum, from six to twelve weeks previously.

In the series of cases here described the operative mortality was 10 per cent.

References

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Adrenal Cortical Hormone IN SURGERY

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THE suggestion has appeared many times in the literature that the adrenal cortical hormone may play a role in the syndrome commonly called surgical or operative shock. The symptoms characteristic of shock and of adrenal cortical insufficiency have more points of similarity than would seem to be mere coincidence. In shock, as well as adrenal cortical failure, hemoconcentration, lowered blood pressure,

decreased pulse rate, and shallow respiration are present and the animal or patient seems unable to maintain a normal blood volume. The intravenous injection of saline in adrenalectomized dogs in shock gives but temporary relief, as, in the absence of adrenal cortical hormone, the circulatory system cannot retain the fluid. On the other hand, adrenal cortical hormone, when given to adrenalectomized animals

Patient	Sex	Age	Condition at time of operation	Type of anesthesia	Duration of preoperative hormone treatment	Operation	Duration of operation in minutes	Per cent decrease in blood pressure	Change in pulse rate
1E-JF	M	55	very poor	epidural	15	cystolithotomy	60	15	-10
2E-IR	M	52	poor	ether in oil by rectum. 1/2% novocaine local	14	partial thyroidectomy	60	+12	-2
3E-FB	F	25	good	epiabdural	15	plastic of ovary and uterus	90	+9	-8
4E-CP	M	47	good	spinal	14	herniotomy	95	15	-2
5E-MR	F	27	good	Avertin	21	cholecystectomy and removal of adhesions	180	+7	+2
6E-AB	M	53	very poor	ether	21	posterior gastro-enterostomy	210	2	+4
7E-AP	M	67	very poor	epiabdural	14	herniotomy	120	15	+4
8E-LB	M	34	fair	spinal—completed with ether	20	excision of renal calculi	120	9	+6
9E-ST	F	72	very poor	epiabdural	20	hysterectomy	120	8	+8
10E-SM	M	55	very poor	epiabdural	20	cholecystectomy, excision of adhesions, and herniotomy	150	7	-2
11E-NC	F	23	fair	epiabdural	14	appendectomy	90	4	-4
12E-CR	M	57	good	epiabdural	21	plastic of rectal fistula	90	4	+4
13E-MT	M	13	good	spinal	7	appendectomy	120	4	-2
14E-P	F	45	very poor	epiabdural	12	hysterectomy	120	16	+6
15E-AF	F	49	poor	epiabdural	12	hysterectomy	120	13	-9
16E-VC	M	68	very poor	spinal	15	herniotomy	75	12	+2
17E-AF	F	50	very poor	epiabdural	16	hysterectomy	120	12	-9
18E-LK	F	29	good	epiabdural	14	hysterectomy	60	6	-4
19E-AC	M	34	good	epiabdural	22	herniotomy	65	4	-6

in experimental shock, will restore the collapsed circulation to normal. It has been suggested that the death of experimental animals in adrenal insufficiency is due to capillary atony, dilatation, stasis, and vascular stagnation (19). These changes are essentially those characteristic of surgical shock. That adrenal cortical hormone might be useful in combating such conditions was first suggested, in 1933, by Swingle (16). Subsequent work, both experimental and clinical, has tended to support this thesis.

I HAVE used spinal anesthesia for several years for all surgical procedures below the diaphragm, unless definitely con-

traindicated, and it has been my experience that patients operated upon with spinal anesthesia undergo a severe stress which reduces, to a certain extent, those factors which make for defense against the complication of the operation. A large percentage of the patients so anesthetized show, as a rule, different degrees of drop in blood pressure and pulse rate approaching the limits of shock. The psychic changes involved, as well as the physiological changes inherent in spinal anesthesia, certainly play some role in the aggravation of conditions conducive to these complications. Blocking of certain numbers of the white rami occurs, and this reduces the number of path-

17E-AF	F	50	very poor	epiubdural	16	hysterectomy	120	12	-9
18E-LK	F	29	good	epiubdural	14	hysterectomy	60	6	-4
19E-AC	M	34	good	epiubdural	22	herniotomy	65	4	-6
20E-BQ	F	38	very poor	spinal	14	appendectomy and partial oophorectomy	45	7	-8
21E-WF	F	42	poor	ether	30	appendectomy	90	8	+2
22E-AA	F	30	poor	spinal	20	gastro-entroposis	40	5	-6
23E-JA	M	46	good	spinal	20	herniotomy	90	6	-4
24E-RC	M	38	good	epiubdural	14	appendectomy	80	9	-4
25E-AC	F	26	good	spinal	10	nephrectomy	45	17	-14
26E-GS	M	56	poor	spinal	30	appendectomy	105	18	-10
27E-JC	F	17	good	epiubdural	14	appendectomy	40	7	-6
28E-GS	F	21	good	epiubdural	15	salpingectomy and partial oophorectomy	70	12	-8
29E-Z	F	38	very poor	spinal and general	30	cholecystectomy and appendectomy	120	19	-14
30E-S	F	64	very poor	spinal	30	amputation of leg	45	15	-14
31E-GM	M	57	very poor	spinal	21	nephrectomy	90	15	-10
32E-MG	F	47	poor	spinal	14	excision of adhesions	75	13	-8
33E-AO	F	37	good	spinal	14	hysterectomy	90	12	-8
Average decrease in blood pressure of treated patients—10.3									
1C-AB	M	48	good	spinal	no	herniotomy	70	27	-14
2C-AB	F	26	good	spinal	no	salpingectomy and appendectomy	90	20	-14
3C-RC	M	47	good	spinal	no	herniotomy	50	21	-16
4C-LP	M	54	good	spinal	no	herniotomy	110	31	-30
5C-SP	M	45	good	spinal	no	herniotomy	50	21	-18
6C-VL	M	42	good	spinal	no	appendectomy	50	20	-18
7C-ED	M	30	good	epiubdural	no	excision of adhesions	60	18	-16
8C-MV	F	54	fair	general	no	appendectomy	90	23	+30
9C-MM	F	36	good	spinal	no	ectopic pregnancy	75	33	-22
Average decrease in blood pressure of untreated patients—23									

Table I
Complete data for 33 patients treated preoperatively with oral adrenal cortical hormone, and for 9 patients not so treated.

ways by which the vasomotor center may, via the autonomic system, maintain normal vasoconstriction and capillary tone. In the anesthesia for upper abdominal work the block may reach as high as the fourth or fifth thoracic segment, and under these conditions some of the cardiac accelerator fibers are blocked, and this lessening of vagus opposition tends to slow the heart, reducing the pulse rate to as low as 50 or 60 beats per minute in some cases with a simultaneous drop in blood pressure. These

losses in capillary tone, lowered blood pressure, and possible loss of blood volume due to the passage of the fluid of the blood across the capillary walls, are similar to the changes suggested as being important factors in the symptomatology of acute adrenal insufficiency (9, 16, 18). It has been suggested by Selye (13) that sudden or undue stress puts a load on the adrenal cortex, and this "alarm reaction" has been suggested by him as a test for adrenal cortical efficiency (14).

With these above considerations in mind it seemed worth while to study the effect of preoperative treatment with adrenal cortical hormone upon the anesthetic, operative, and postoperative course of patients operated upon under spinal and general anesthesia.

Methods and clinical results

I SHALL present here the clinical results of preoperative preparation with adrenal cortical hormone in 33 cases and compare them with those of 9 patients who did not receive such preoperative preparation. Because of the recognized advantages and the convenience of frequent small doses of hormone over less frequent large injections an oral preparation was used. This material, cortisorbate tablets, a charcoal absorbate of the adrenal cortical hormone, is orally standardized and has been shown to maintain the life of totally adrenalectomized animals (1).*

With few exceptions all patients received 3 cortisorbate tablets daily for periods of 10-30 days before the operation. Wherever possible adequate diets, rich in vitamins, were prescribed and patients instructed to take large amounts of fluid. In some cases, Lugol's solution, 5 drops, t.i.d., was given for the benefit which might be obtained through the stabilization of thyroid function.

No effort was made to select the cases for clinical trial. Some patients were considered "good operative risks", while others were classed as "poor risks" because of the nature of the pathology which may have prevented proper rest and nourishment during the preoperative period.

A SUMMARY of the work is presented in Table I. In this table an attempt

* I wish to thank Dr. E. W. Blanchard of the Research Laboratories of Schieffelin and Co., New York City, for close cooperation and for generous supplies of the cortisorbate tablets used in the study.

Table II

Hemoconcentration occurring in the blood of hormone prepared and control patients as indicated by red cell counts and per cent of hemoglobin values.

Case	Red cell count in 1,000's			% Hemoglobin		
	Before operation	After operation	Change in %	Before operation	After operation	Change in %
7C—ED	4,400	4,990	13	88	102	16
8C—MV	3,900	4,220	8	94	104	11
9C—MM	3,100	3,500	13	82	98	19
Averages for control cases			11.1			15.3
1E—JF	4,700	4,900	4	92	96	4
2E—IR	4,900	4,900	0	98	98	0
3E—FB	3,700	4,000	8	82	90	10
17E—AF	3,600	3,900	8	80	84	5
21E—WF	4,860	5,230	8	96	104	8
22E—AA	3,200	3,470	8	76	80	5
31E—GM	3,200	3,360	5	75	82	9
32E—MG	3,800	4,100	8	84	86	2
33E—AO	3,700	3,940	6	78	84	8
Averages for treated cases			6.1			5.7

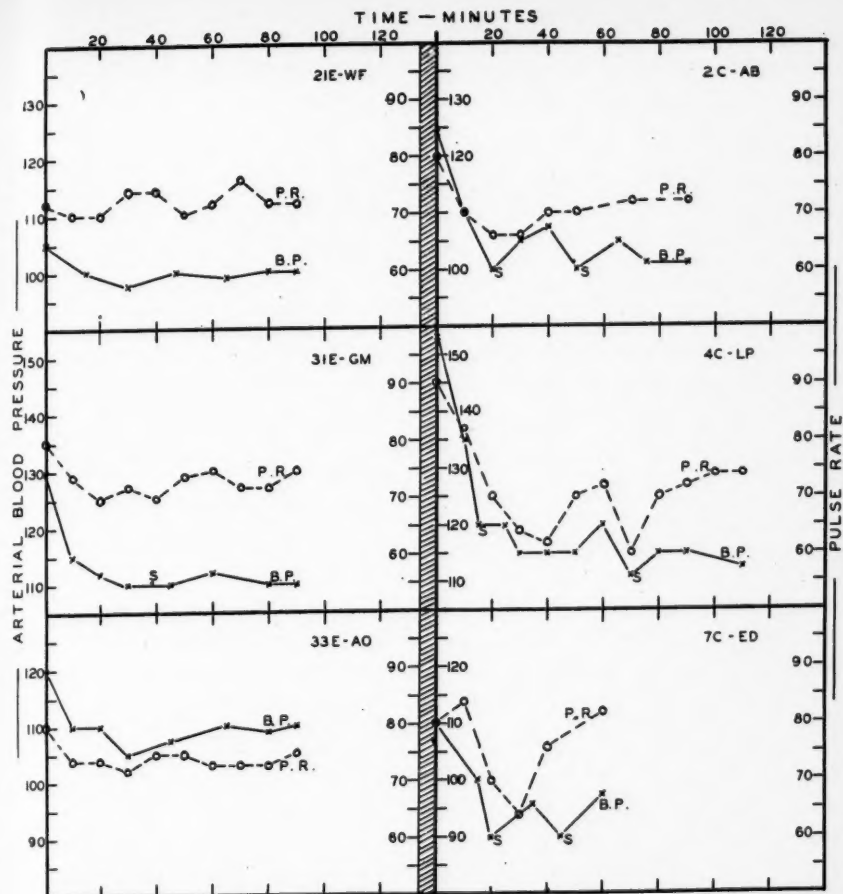


Figure 1

Shows changes in blood pressure and in pulse rate for three treated patients and three control cases. Blood pressure is shown on left hand ordinates, and pulse rate on right. At points marked S on the blood pressure curves stimulation with ephedrine and oxygen was given. Time shows duration of operation.

has been made to present, as completely as possible, the essential data on each treated and untreated individual. No attempt has been made to strike an average for the deviation in pulse rate. Such a figure would, obviously, have no significance. The character of the pulse is as important as the rate, and in some cases a substantial drop

or increase from the starting level has been followed by satisfactory stabilization at a new level (see case 31E-GM in Fig. 1). In spite of this consideration, however, an examination of the figures for the pulse will make it evident that much greater changes in heart rate occurred in the untreated cases.

In all of the untreated patients a marked drop in arterial blood pressure occurred, the average decrease being 23 per cent. Three of the cortisorbate treated patients showed slight rises in blood pressure, and these three values were ignored in striking the average blood pressure decrease for this group, 10.3 per cent.

All of the patients operated without the benefit of adrenal cortical hormone preparation needed stimulation at least once during the operation with ephedrine and/or oxygen. In only two cases prepared with the hormone was stimulation necessary.

One of the symptoms of shock, as contrasted to hemorrhage, is the hemoconcentration which occurs very early in the development of the condition. No hematocrit values are available for these cases but the red cell count and per cent hemoglobin values prior to, and immediately after, the operation are given in Table II for 9 treated and 3 untreated cases. There was an appreciably greater loss of fluid from the blood of the untreated patients than from that of the prepared cases.

Individual, representative protocols for three treated patients and for three "controls" are given here, and in Fig. 1 are given their blood pressure and pulse rate changes throughout the course of the operations.

Protocols

21E—WF. Female. Age 42. Bilateral salpingectomy, partial oophorectomy, and freeing of adhesions performed under general anesthesia; gas-oxygen ether. Operation lasted 90 minutes. Patient's general condition was poor. She was prepared for 1 month with usual care and with 3 cortisorbate tablets per day. Patient withstood operation very well with no stimulation needed. Oscillation of respiration, pulse and blood pressure was negligible. Recovery uneventful.

31E—GM. Male. Age 57. Right nephrectomy for carcinoma of kidney under spinal anesthesia—185 mgms. of novocaine in 1st lumbar space. Patient's general condition very poor—compensated mitral stenosis, extra systoles, moderate jaundice. Very weak with rapid loss of weight. Prepared for 3 weeks with special diet and 3 tablets of adrenal cortical hormone per day. Withstood 90 minute operation well with one stimulation necessary. Recovery uneventful.

33E—AO. Female. Age 37. Hysterectomy for uterine fibroma. Anesthesia—spinal—180 mgms. novocaine in 2nd lumbar space. General condition—good. Prepared for 2 weeks with usual care plus Lugol's solution (5 drops t.i.d.) and cortisorbate (1 tablet t.i.d.). 90 minute operation was smooth and without incident. Rapid recovery.

20—AB. Female. Age 26. Appendectomy, salpingectomy and plastic of ovary. Anesthesia—spinal—180 mgms. of novocaine in 2nd lumbar space. Prepared in normal manner without adrenal cortical hormone. 20 minutes after operation began patient went into collapse with irregular, slow pulse and severe drop in blood pressure. Stimulation with ephedrine and oxygen needed twice. Subsequent recovery uneventful.

4C—LP. Male. Age 54. Repair of double inguinal hernia under spinal anesthesia—180 mgms. of novocaine in 3rd lumbar space. No adrenal cortical hormone preparation. General condition good. Operation lasted 2 hours and was stormy with 2 periods of stimulation needed. Recovery uneventful.

7C—ED. Male. Age 30. Operation—freeing of bands of adhesions causing partial obstruction of

duodenum. Anesthesia—epidural. No adrenal cortex preparation. Operation lasted 1 hour. Oscillation of pulse and blood pressure marked. 2 stimulations needed. Postoperative course stormy, although ultimate recovery good.

EVERY effort has been made to make these examples truly representative of the results of this study. As a matter of fact case 31E-GM was one of the treated patients considered a "bad risk," and was one of the 2 cases in this group in which stimulation was necessary, while 2C-AB was the second best of the untreated group in response to the operation. The difference in character of the blood pressure and pulse rate response during the operations in these 6 individuals is strikingly apparent, upon even casual examination.

The hemoconcentration indicated by the increased red cell counts and per cent hemoglobin values, Table II, shows that an amount of fluid has been lost from the blood of the non-treated patients which is comparable to the hemocentration reported by Moon (7, 8) and by Scudder (12) as present in patients in surgical and traumatic shock. This degree of hemoconcentration does not appear in the adrenal cortical hormone treated individuals.

The psychic and subjective response of the treated patients during the operation and postoperatively was strikingly better than that of the untreated cases, although no objective evaluation of this factor can be made.

The results set forth above leave no doubt in the mind of the author as to the real value of the preoperative preparation of patients with adrenal cortical hormone—in this instance, a standardized oral preparation.

Discussion

AS has been stated above, the idea that adrenal cortical hormone might be beneficial in secondary shock, and that the etiology of shock and adrenal cortical deficiency might be similar, if not identical, has been suggested. In 1933 Swingle and his coworkers (16) stated, "The idea that adrenal cortical hormone might prove of benefit in the treatment of human traumatic shock is advanced merely as a suggestion. Adequate proof can only come through

clinical trial." Prior to that time other workers had suggested that shock might be due to adrenal exhaustion or removal [Corbett, 1915 (2); Sweet, 1918 (15)], but their work preceded the establishment of the fact that the *cortex* of the adrenal capsule was the vital portion, and antedated the development of theories as to the function of this important hormone. With few exceptions (4, 5), recent work has corroborated the idea of a marked similarity between, if not the actual identity of, secondary or traumatic shock and adrenal cortical insufficiency (3,6,9,12,16-20). It may be repeated here, for emphasis, that the principal symptoms of adrenal cortical deficiency and of shock are strikingly similar, namely: hemoconcentration, lowered blood pressure, high blood potassium, and circulatory collapse due to atony, capillary dilatation, stasis, and vascular stagnation, together with a probable alteration in cell membrane permeability. Which, if any *one*, of these factors can be called "the fundamental" cause of the symptomatology need not concern us in this discussion.

SWINGLE *et al.* (18) have shown for the adrenalectomized dog in traumatic shock, and Scudder (12) for the human, that the shock syndrome, in acute cases, cannot be controlled by salt or glucose solutions, regardless of the route of administration, unless adrenal cortical hormone be given simultaneously. Ragan, Ferrebee, and Fish in 1938 (11) reported that the plasma volumes of 9 patients treated preoperatively with desoxycorticosterone acetate did not show the drop exhibited by untreated patients when both groups were subjected to operation under ether anesthesia. Results with cortin gave similar but less conclusive results. While this paper was being written the late Dr. Perla and his associates (10) reported the use of desoxycorticosterone acetate together with salt in combating histamine shock in rats and mice. As might be expected, prophylaxis gave much better results than did treatment. They also included a preliminary report of the use of this synthetic material in the preparation of patients for

operative procedures, and found the same strikingly beneficial results as are reported here.

Scudder (12) has recently published an excellent review of the development of the modern concept of the etiology and treatment of shock. He finds that many patients who have not responded to the usual methods of shock therapy—clysis, and intravenous injections of saline and glucose solutions—will give excellent response, and will recover from what would undoubtedly be fatal shock, when adrenal cortical hormone (eschatin) is simultaneously administered.

I CANNOT stress too strongly the advantages of the preoperative preparation of the patient with the adrenal cortical hormone over attempts to combat the shock after marked symptoms have become manifest. That such shock can be alleviated has been shown by Scudder (12), but massive intravenous injections of hormone together with large amounts of fluid were needed. Such heroic measures are obviously necessary in traumatic or surgical shock resulting from accidents or from operations performed as a result of a sudden and acute onset of serious symptoms. In the vast majority of cases, however, where the date of the operation is set well in advance, the principle that "an ounce of prevention is worth a pound of cure" is never more applicable.

It is impossible to state positively the means by which the adrenal cortical hormone acts in protecting the patient against the development of conditions leading to shock. However, in the light of accepted theory as to the probable function of the adrenal cortex, it is probable that the individual, having been "primed" for some time with the hormone, is better able to regulate the fluid and electrolyte balance between blood and tissue through the maintenance of normal capillary tone and membrane permeability.

From the data here presented it appears evident that the preoperative preparation of the patient with adrenal cortical hormone enabled him to withstand the stresses of anesthesia and operation much better

than the individual not so treated, and with no complications approaching the magnitude of shock. These results give additional support to the idea that there is a marked similarity between adrenal cortical insufficiency and shock, and give to the surgeon one more weapon in his armamentarium against the complications unavoidably incident to major surgical procedures.

Summary

THIRTY-THREE patients were prepared for major surgical procedures by an oral adrenal cortical hormone preparation given in dosages of 3 tablets daily for periods of 10-30 days prior to operation. This regimen supplemented the usual preparation, given to all patients, of special diet, rest, and, in some instances, Lugol's solution.

The hormone treated individuals withstood the stresses of anesthesia and operation much better than the patients not so

treated. Their blood pressure, pulse rate, and plasma volume, as measured by red cell counts and per cent of hemoglobin, showed much less fluctuation than in the "controls". In all of the unprepared patients drastic drops in these blood values occurred, and in all of these individuals, symptoms approaching the limits of secondary shock were manifest. These shock symptoms were absent, or very slight, in the hormone prepared patients.

The adrenal cortical hormone very probably effects its beneficial action by enabling the individual to maintain a better regulation over the fluid and electrolyte balance of the blood and tissues with little change from the normal in cell membrane permeability. This would be in keeping with the recognized action of the adrenal cortical hormone in experimental animals.

The value of preoperative prophylaxis with the hormone, rather than attempted heroic treatment with large amounts of injectable extract after shock is present, has been stressed.

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114 EAST 54TH STREET.



CLINICAL NOTES

Massive Unilateral Atelectasis IN THE NEWBORN

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Kansas City, Missouri

Report of a case:

WHILE massive atelectasis has only recently come to our medical knowledge, there has been a great deal written about it in literature. Articles are very numerous concerning massive atelectasis in children and adults but very few articles appear concerning atelectasis in the newborn.

The lungs of the fetus in utero are normally in a state of atelectasis, and expansion and aeration begin with the first respiration following birth. It must follow, then, that any plugging of a bronchus before the first deep respirations will result in the persistence of the fetal atelectasis. The case herewith reported is apparently one of these.

BABY "R," female, was delivered after a normal labor, without instrumentation, on July 29, 1940. She breathed promptly and no efforts at resuscitation were required. Nothing abnormal was noticed about the child at the time of birth. On August 1, 1940, the nurse discovered a clot of blood about one-half cm. by 2 cm. in the patient's bed. Since the mother was known to have an arrested tuberculosis, the nurse became alarmed lest the child had had a pulmonary hemorrhage, and she called the obstetrician who ordered a radiograph of the child's chest at once. I saw the child about four hours later and examination of the chest revealed no abnormality.

I gave it as my opinion that the child had brought the blood up from her lungs and she might have had a massive atelectasis as a result of the blood. Inspection of the x-ray made just after the blood was discovered showed diffuse opacity of the left lung with some narrowing of the intercostal spaces on that side, and some shifting of the heart toward the left. Another radiograph was immediately ordered and showed complete clearing of the opacity on the left with the heart in normal position and no narrowing of the intercostal spaces on the left.

My diagnosis was massive atelectasis due to a plugging of the left main bronchus with a blood clot. The atelectasis apparently had cleared before I reached the hospital.

Figure 1

Plate was made immediately after blood was discovered in bed. Note narrowing of interspaces on left and position of heart adjacent to chest wall on left, with diffuse opacity of left lung.

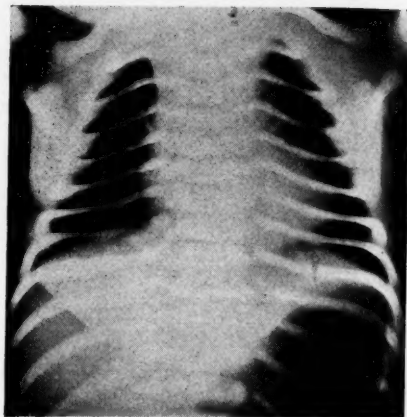


Figure 2

Plate made four hours after plate No. 1. Note that left lung is cleared, that interspaces are of approximately equal width and that heart is moved over toward the center of chest.

Comment:

IT is difficult to understand how the blood reached the patient's bronchial tube, since the delivery was that of a normal vertex position and there was no history of the child having been a blue baby. The fact remains that the blood was found in the child's bed and that it had a massive atelectasis at the time the blood was discovered. It is conceivable that such a clot might have obstructed the trachea and resulted in a bilateral persistence of the atelectasis with suffocation of the child. Such incidents may be more common than are suspected and it may be that some of the cases of failure of children to breathe immediately after delivery are due to this factor.

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PLAZA MEDICAL BUILDING, 315 ALAMEDA ROAD.

NEW INSTRUMENTS

THE EKG-*Visilometer*

A New Instrument for the Visualization and Mensuration of Electrocardiographic Tracings

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THE use of the electrocardiogram as a clinical adjunct to the diagnosis and management of cardiac disease is steadily increasing. At the same time, there has been a parallel demand for more meticulous reading and more careful analysis of electrocardiographic tracings. To simplify and enhance the accuracy of such readings this instrument was devised. Essentially, it consists of: 1) a lens for magnification purposes; 2) a pair of calipers; 3) a centimeter rule.

Physical Description of the Instrument

THE main body of the instrument is made up of a light weight metal, surfaced in chromium plating. The over-all length of the instrument is $17\frac{1}{2}$ cm., and it is about 6 cm. at its widest point. At its upper, and widest, end is a magnifying system consisting of a lens which is cut oblong in shape.

*Instrument perfected with assistance of Frank Baker Smith, M.D.

THE left edge of the body of the instrument is leveled and calibrated in millimeters throughout its length of 17.2 cm. Between the points of $8\frac{1}{2}$ and $16\frac{1}{2}$ cm., adjacent to the calibrations, there is a track cut out in the metal, along which runs a black-pointed indicator, which can be fixed by a small ratchet set screw at any point desired.

Part of the instrument is a pair of standard calipers, whose over-all length is $10\frac{1}{2}$ cm., exclusive of the steel pins. The caliper pins are adjustable in length, but are usually set to protrude $1\frac{1}{2}$ cm. beyond the ends of the caliper legs. At the lower end of the tapering body of the instrument is a hollow half-cone-shaped housing, which has fitted into it the pins and lower ends of the legs of the closed calipers. The hinged end of the calipers is then fixed to the instrument by a U-shaped spreader clip.

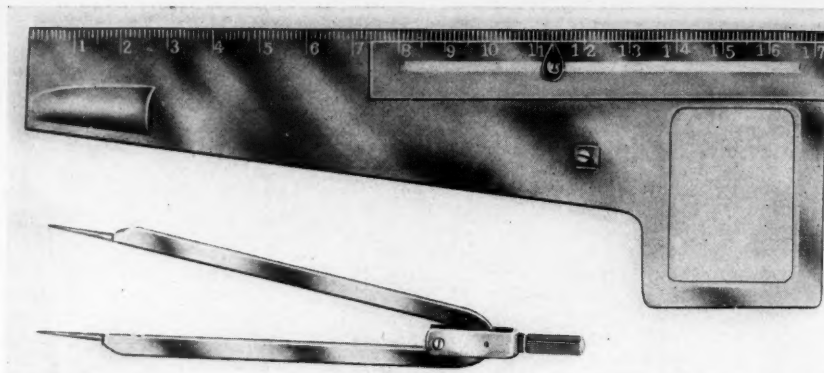


Figure 1

Shows instrument with calipers detached and ready for use in analysis of electrocardiograms.

Description of the Use of the EKG-VISILOMETER

THE calipers are used to measure the lengths of intervals, waves, complexes and their components; also, the amplitude of the various deflections.

The lens system makes it possible to blow up the smallest deflections to waves of considerable size and detail. It increases the accuracy of our caliper measurements.

The calibrated border of the instrument, together with the movable adjustable indicator, is used as a means of rapidly computing the heart rate. The time calibrations of tracings vary with the machine used. Also, we have found that, using the same machine, a strip of tracing, representing a

certain time interval, will vary in its length from time to time (change in speed of feed of paper, stretching of paper while developing, etc.). With the indicator adjustable over a distance of 8 cms., some fraction of a full minute can be laid off on any of the standard tracings.

THE calibrated edge of the instrument is laid just under, and parallel to, the tracing, placing the lower end of the ruler on a time-line immediately preceding a complex. From this point a certain number of seconds are counted off on the tracing, and the indicator set at the end of the same interval. Thereafter, the number of main deflections in this interval, multiplied by a known factor, gives heart rate per minute.

With the indicator thus set, innumerable tracings from the same machine can be read, and rate computed in a very short period of time. 121 EAST 60TH STREET.

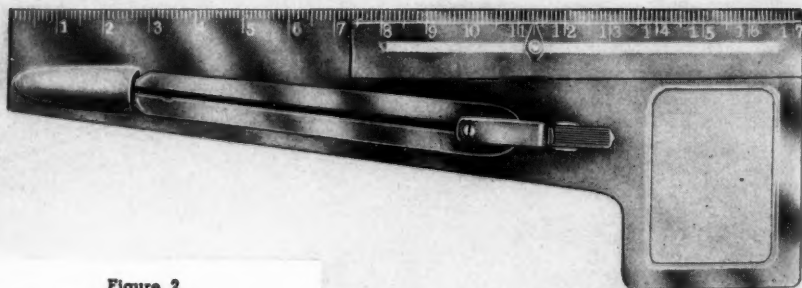


Figure 2

Shows assembled instrument.

RESEARCH

I.

SPIROCHETAL BACTEREMIA WITH CULTIVATION OF THE ORGANISM ON THE CHORIO-ALLANTOIC MEMBRANE OF THE CHICK EMBRYO

FLORENCE M. STONE, Ph.D.

Abstract: Relapsing fever occurs in most parts of the world with the exception of Australia. In contrast to this type of fever we are reporting three cases of bacteremia in which spirochetes resembling *Borrelia* in appearance were isolated in blood cultures by Dr. Calvin B. Coulter*, bacteriologist of the Kings County Hospital. Although the temperatures were high in each case, 101-105 degrees, there was no periodicity to the fever. The diagnosis in two patients was gangrene of the foot and lower extremity and in the third secondary bronchopneumonia and sepsis with fatal termination.

The spirochetes were first cultivated in nutrient broth which had been incubated for six days at 35 degrees C. The motility, however, became markedly diminished, and variations in morphology occurred. The

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chorio-allantoic membranes of ten day chick embryos were found to be most satisfactory for the cultivation of the spirochete. Colonies containing many organisms were seen in pockets along the surface of the ectoderm. No lesions were discernible, and tissue sections revealed no inflammatory reaction with the exception of an abundant serous exudate on the surface of the membrane.

Although the source of the infections cannot be established nor the clinical pictures correlated with relapsing fever of the classical type, the cases reported may serve to make us conscious that there are acute blood stream infections other than the usual bacterial types.

Discussion

D. R. ELLISTON FARRELL (abstract)
—The findings Dr. Stone has just reported are of interest and significance. Sim-

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* Died May 10, 1940.

ilar cases of spirochetemia are undoubtedly occurring elsewhere without recognition, since few routine blood cultures are examined by darkfield in fresh preparations after incubation at 35° C. for six days. Wider use of these methods may result in additional reports.

The origin of the spirochetal blood stream infection is problematical. No evidence has been presented for or against insect transmission, traumatic inoculation, extension of a spirochetal infection from an area of gangrene, or invasion of the blood stream by organisms usually confined to the gastro-intestinal tract. It is equally uncertain whether the organisms which

Dr. Stone isolated were pathogenic to their human hosts.

The implications of Dr. Stone's report are clear. In debilitated patients or in patients with gangrene the usual routine examination of blood cultures is inadequate and should be supplemented by darkfield examination of fresh preparations from flasks incubated at 35 to 36° C. If spirochetes are found, the patient should be given the arsenical therapy usual in relapsing fever. Although this infection seems of another type, a favorable effect on the fever might follow and the amputation of a gangrenous extremity might be deferred or avoided.

II

SENSITIVITY OF THE SMALLEST BLOOD VESSELS IN HUMAN SKIN TO GRADED MECHANICAL STIMULATION*

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Abstract: A method is described by which the sensitivity of the smallest blood vessel in human skin to graded mechanical stimulation is estimated. This is achieved by controlling the rate of application of suitable weights along the skin in such a manner that threshold tache reactions are elicited. The effect of certain physiological variables is described. These include diminished sensitivity with circulatory stasis,

with partial venous occlusion, and with systemic anoxemia. Sensitivity is increased when the surface temperature is elevated and in systemic hypercapnea. A procedure is described for obtaining from the data a coefficient of excitability.

Discussion

DR. WILLIAM S. COLLENS, Greenpoint Hospital, discussed the mechanism of reactive hyperemia and commented upon some of the clinical implications of this work.

* Supported by grants from the Josiah Macy, Jr., Foundation and the Committee for Research in Problems of Sex, National Research Council.

III

THE CALORIGENIC ACTION OF THYROID SUBSTANCE IN OBESE PATIENTS

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Abstract: The calorigenic action of thyroprotein when given orally was investigated in over 100 obese patients. The patients could be grouped according to their response to the drug into hypothyroid and non-hypothyroid cases. The basal metabolic rates of the former group quickly rose to a normal level after adequate amounts of the thyroid substance were given by mouth. A maintenance dose was then required to keep the basal metabolic rate at that level. In the second group, obese patients who were not hypothyroid, the influence of the thyroid substance on the basal metabolic rates was variable. A few of the patients were extremely sensitive, showing increases in oxygen consumption and toxic symptoms soon after medication was begun. The remainder of the cases showed little or no rise in the metabolic rates after large doses were administered for several weeks. Some patients after prolonged medication actually consumed less oxygen in the basal state. Delayed calorigenic responses occasionally occurred after three or four weeks. Sweating and diuresis occurred even in the absence of calorigenic action; the relation of this to weight loss was discussed. Representative case reports were presented.

Discussion

DR. TASKER HOWARD (abstract)—Dr. Handelsman's obese patients, lacking myxedema, lost weight gradually under thyroid therapy, with no increase in metabolic rate. This he ascribes to the diuretic effect of thyroid. Pharmacological studies only partially explain this.

In 1917 Eppinger showed that saline

introduced hypodermically was absorbed and excreted more slowly in thyroidectomized dogs than in normals; more slowly in normals than in thyroid-fed dogs. This retention of water in the tissues in experimental and clinical myxedema was ascribed to an increase in the albumen content of the tissues and their fluids.

Various investigators have found the blood typically concentrated in myxedema. Hildebrandt in 1924 demonstrated in rabbits fed thyroxin an increase of blood volume of 40 per cent in six hours accompanied by a rapid diuresis.

W. C. Thompson in 1926 reviewed this matter and paralleled these studies with myxedema patients, increasing their blood volume by about 25 per cent by thyroid feeding. He quoted Bock and Field's increase of cardiac minute output and of blood volume by feeding thyroid to myxedema patients as responsible for the diuresis. These factors are less evident on feeding normal subjects thyroid. Eppinger suggested that in myxedema administration of thyroid increased catabolism, reducing the oncotic pressure of tissue fluids.

Dr. Handelsman's patients showed no increased oxygen consumption. Possibly Brull's recent work would explain their diuresis. The kidney of thyroid-fed dogs transplanted into the femoral circulation of other dogs consistently caused a much greater urine output and blood flow than a similar transplant from normal dogs. Brull believed the local thyroxin effect on the arteries of the kidney lasted after excision and transplantation.

Blood Sugar

AND LIVER GLYCOGEN

1. After Single Doses of Sulfanilamide, Sodium Sulfapyridine and Sodium Sulfathiazole*

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THE purpose of this study was to determine the effects of single doses of sulfanilamide, sodium sulfapyridine (sodium 2-para-amino-benzene-sulfonamido; pyridine monohydrate, Lederle), and sodium sulfathiazole (sodium 2-para-amino-benzene-sulfonamido-thiazol) on blood sugar and liver glycogen.

Young albino male rats of 90 to 150 grams, on a diet of Purina Dog Chow Checkers, were used.

In order to determine the basal levels of blood sugar and liver glycogen, one group of rats was fasted 18 hours, and then killed by a blow on the head. Blood was collected at this time for sugar determinations (Somogyi - Shaffer micro method). The entire liver was removed immediately and hydrolyzed in 60% potassium hydroxide; an aliquot part was taken for glycogen determinations (modi-

fied Pflüger method). The average blood sugar of 20 fasting rats was 85 mgms. per 100 cc. and the liver glycogen was 0.25%, as

shown in Table I.

A control group of 38 rats was fasted 15 hours and then given 3.5 cc. of 10% glucose solution per 100 grams of rat, by stomach tube. These rats were killed 3 hours later; the average blood sugar in this control group was 93, and the liver glycogen 1.48%.

The drugs were studied on fasting rats and on rats which received glucose after a 15 hour fast. In the fasting groups, the drug was given at the end of a 15 hour fast and allowed to act for three hours before the rats were killed. In the other groups, the rats were fasted 15 hours, given glucose and then the drug; these rats were killed 3 hours after having been given glucose. In addition to these studies, in which the drug was allowed to act for 3 hours in fasting rats and in rats in which

*Supported by a grant from the Committee on Therapeutic Research, Council on Pharmacy and Chemistry, American Medical Association.

abundant glucose was available, a few observations were made in which the drug was allowed to act for less than 3 hours; in these rats, there was the usual 15 hour fast, the giving of glucose, and then the drug was given 1 hour, 15 minutes, or at whatever interval of time desired before the animal was killed. In some cases the fasting sugar was determined before the glucose and drug were given.

The dosage of sulfanilamide was determined by the low solubility of the drug, and the amount of solvent which could be safely injected into the peritoneal cavity of rats of the weight used. In the first series of experiments we chose dosages of sodium sulfapyridine and sodium sulfathiazole of equal toxicity. Later we repeated the experiments using equal doses of the drugs. The results found with each drug will be presented.

*Sulfanilamide**

THE dose used was 1.8 cc. of 1% solution of sulfanilamide powder per 100 grams of rat; this was given by the intraperitoneal route. Marshall¹⁰ states that there is no significant difference in the concentration in the blood when sulfanilamide is administered by different routes.

When sulfanilamide was given to fasting rats in this dosage it caused no appreciable change in blood sugar; there was a decrease in the liver glycogen. When sulfanilamide was given to rats in which glucose was available, the blood sugar at the end of 3 hours was at the control level; the liver glycogen, however, had reached 2.11%, which is definitely higher than that of the control group. Goodier⁸ found no effect on blood sugar or liver glycogen.

Sodium sulfapyridine

THE doses used were (a) 1 cc. of 10%, (b) 1 cc. of 9% and (c) 1 cc. of 7.5% solution of sodium sulfapyridine per 100 grams of rat. When this drug was given to fasting rats the blood sugar rose to 134 mgms., and the liver glycogen de-

creased. When glucose was available, the blood sugar rose far above the control level. The liver glycogen fell below the control level, as shown in Table I. Thus, under the above conditions, the administration of sodium sulfapyridine is followed by a marked increase in blood sugar. Since the liver glycogen is markedly decreased, it suggests that glycogen formation and storage are interfered with. The intravenous route of administration gave similar results.

Marshall⁹ found the pH of a 10% solution of sodium sulfapyridine to be 11. He reported that the administration of an amount of sodium carbonate equivalent in base to 4 grams per kilo of sodium sulfapyridine to mice caused no symptoms. We wished to verify this in rats. To a small group of rats, immediately after the administration of glucose, 1 cc. of 1.8% sodium carbonate solution per 100 grams of rat was given by the intraperitoneal route. This was equivalent in sodium to the dose of sodium sulfapyridine used (10%). The rats were killed after 3 hours; the blood sugar average was 112 and the liver glycogen was 2.10%. We cannot say that the alkalinity of sodium sulfapyridine plays no part; it seems to play a small part in the elevation of the blood sugar. However, since the level of liver glycogen is raised after sodium carbonate administration, the glycogenolysis following sodium sulfapyridine is apparently not due to the alkalinity of the solution.

*Sodium sulfathiazole**

THE doses used were (a) 1 cc. of 10%, (b) 1 cc. of 9% and (c) 1 cc. of 7.5% solution of sodium sulfathiazole per 100 grams of rat. When this drug (7.5%) was given to fasting rats, the blood sugar rose and the liver glycogen remained unchanged. When glucose was available, the blood sugar rose higher. The liver glycogen was 1.56%, which is not far from the control level. This differs from the results found with sodium sulfapyridine. The blood sugar increase is not at the expense

* Sulfanilamide powder, neoprontosil and P.S. 386 were furnished by the Department of Medical Research, Winthrop Chemical Company.

* Sodium sulfathiazole was furnished by the Squibb Institute for Medical Research.

of the liver glycogen, after sulfathiazole.

The question arose as to whether or not a part of the reduction of the copper might be due to the presence of the drugs in the blood filtrate. To rule out this possibility, sugar determinations were made on the filtrate before and after fermentation with yeast. Since no reduction of the copper occurred after fermentation, it seemed safe to conclude that it was really blood sugar and not the drug which was responsible for the high values found. We are indebted to Dr. Grace E. Wertenberger for this section of the work.

Neoprontosil and P.S.386

A few observations were made on each of these drugs. The results are presented in Table I; it will be noted that the action of each resembles that of sulfanilamide.

Periods of less than 3 hours:

ALL of these results are shown in Table II. When sulfanilamide was allowed to act for the periods of 1 or 2 hours, the blood sugar remained at the control level; the liver glycogen was near the control level. When sodium sulfapyridine was allowed to act for short periods of time, the results were similar to those found for 3 hours. The blood sugar rose almost as high in 15 minutes as it did when the drug acted for 3 hours. The liver glycogen decreased, even in 15 minutes, but not to so low a level as after 3 hours. From this type of experiment one may conclude that when glycogen is

present in the liver, it is changed rapidly to glucose under the action of sodium sulfapyridine and delivered to the blood at a much faster rate than the tissues can handle it. When sodium sulfathiazole is given, the increase in blood sugar is proportional to the time during which it is allowed to act, as shown in Table II. The liver glycogen decreased somewhat when the drug acted for 1 hour; at present we cannot account for this.

Discussion and conclusions

THE rats appeared ill within a few minutes after sodium sulfapyridine or sulfathiazole was given. When the rats were killed the stomachs were found to be greatly distended and there was evidence of peritoneal irritation. Antopol¹ reported a tremendous increase in gastric secretion after sodium sulfapyridine. In order to ascertain if the increase in blood sugar after sodium sulfapyridine was due to concentration of the blood, hematocrit determinations were done on a small group of rats. The following results indicate that a concentration of blood is not responsible for the increase in blood sugar. The hematocrit reading was 45.7% before and 47.3% three hours after the drug was given.

THAT this group of drugs is not without damage to the liver is shown by the following observations.

Liver damage has been found after sodium sulfapyridine by Antopol¹ and after sulfanilamide by Davis². Marshall¹¹ in

Table I
Three hour periods

	1	2	3	4	5
Fasting 18 hours	20	85	0.25	3.94	
Control; glucose, no drug	38	93	1.48	4.24	
Fasting; sulfanilamide, 1%	10	86-82	0.65	3.69	
Glucose and sulfanilamide, 1%	21	84-93	2.11	4.15	
Fasting; sodium sulfapyridine, 10%	9	134	0.95	3.54	
Glucose and sodium sulfapyridine, 10%	31	202	0.14	4.02	
Glucose and sodium sulfapyridine, 9%	9	331	0.16	4.21	
Glucose and sodium sulfapyridine, 7.5%	26	190	0.73	4.12	
Glucose and sodium carbonate, 1.8%	4	112	2.10	3.97	
Fasting; sodium sulfathiazole, 7.5%	9	123	0.24	3.67	
Glucose and sodium sulfathiazole, 7.5%	24	225	1.56	3.87	
Glucose and sodium sulfathiazole, 9%	16	205	1.26	4.15	
Glucose and sodium sulfathiazole, 10%	11	233	0.80	4.27	
Glucose and Neoprontosil, 1%	9	105	1.86	4.29	
Glucose and P.S. 386, Winthrop, 10%	10	96	2.00	4.42	

Table II

	1	2	3	4	5
Sulfanilamide—1 hour, 1%	2	97	1.55	3.88	
Sulfanilamide—2 hours, 1%	2	94	1.47	3.94	
Sulfanilamide—3 hours, 1%	21	84-93	2.11	4.15	
Sodium sulfapyridine—15 minutes, 10%	10	92-183	0.83	3.76	
Sodium sulfapyridine—30 minutes, 10%	3	187	0.41	3.74	
Sodium sulfapyridine—45 minutes, 10%	2	212	0.42	3.85	
Sodium sulfapyridine—1 hour, 10%	2	101-181	0.26	3.58	
Sodium sulfapyridine—2 hours, 10%	2	194	0.21	3.80	
Sodium sulfapyridine—3 hours, 10%	31	202	0.14	4.02	
Sodium sulfathiazole—15 minutes, 7.5%	10	82-128	1.48	3.31	
Sodium sulfathiazole—1 hour, 7.5%	10	90-153	0.77	3.42	
Sodium sulfathiazole—3 hours, 7.5%	24	225	1.56	3.87	

his study of the distribution of sodium sulfapyridine found a high concentration in the liver. Brown² found that sulfapyridine may remain in the liver for more than a month after chemotherapy has been terminated. Garvin⁴,⁵ reported hepatitis after sulfanilamide. Long⁸ found microscopic lesions in the livers of mice after prolonged administration of sulfathiazole.

Column 1 of Table I shows the condition of the rat and the drug used; each drug was allowed to act for 3 hours. When glucose was given, it followed a 15 hour fast.

Column 2 shows the number of rats used. Column 3 shows the blood sugar in mgms. per 100 cc. Where 2 values are given, the first is the one found at the end of the 15 hour fast, and the second after the drug had acted for 3 hours. Column 4 shows the glycogen as per cent of liver weight. Column 5 shows the ratio of liver weight to body weight, in per cent.

Column 1 of Table II shows the drug and the length of time it acted before the rat was killed; all of these rats had received glucose after a 15 hour fast. Column 2 shows the number of rats used. Column 3 shows the blood sugar in mgms. per 100 cc. The first value is that found after the

15 hour fast; the second is that found at the time of death. Column 4 shows the glycogen as per cent of liver weight. Column 5 shows the ratio of liver weight to body weight in per cent.

From our study we conclude that the general level of the blood sugar and the functions of glycogen formation and storage are not interfered with by sulfanilamide in a single dose of the size used.

In contrast to this, the administration of sodium sulfapyridine is followed by an increase in blood sugar and by alteration in both glycogen formation and storage; this held for the three dosages used. The greater the dose, the more pronounced the effects.

The administration of sodium sulfathiazole is followed by a marked increase in blood sugar; in this respect it resembles sodium sulfapyridine. However, in equally toxic doses, it has little effect on liver glycogen. When given in larger doses (10%), in which there is about 50% mortality, it leads to some decrease in liver glycogen. It seems safe to conclude that in equally toxic doses, sodium sulfapyridine is more harmful to the liver than sodium sulfathiazole. Long⁷ and Van Dyke¹² have likewise found that sulfathiazole is less toxic than sulfapyridine.

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Film Explaining the Wassermann, Kline and Colloidal Gold Laboratory Tests

A 16 mm. motion picture, depicting the Wassermann and Kline laboratory tests on specimens of blood and spinal fluid, has been produced by the Bureau of Social Hygiene of the New York City Department of Health, in cooperation with the New York State Department of Health and the U. S. Public Health Service. The film is called "The Laboratory and Venereal Disease Control" and is believed to be the first film on this subject. It is available in black and white and in color and is offered without charge by the Bureau for showings to medical schools and societies, to hospital staffs, nursing groups, laboratory and public health workers in New York City. An experienced operator and projection equipment are supplied.

The film runs for approximately 15 minutes, and may be obtained by writing to the Bureau of Social Hygiene, 125 Worth St., New York City, or calling WOrth 2-6900, extensions 252 or 501.

A slide film covering the same subject has been prepared by the Bureau for physician-lecturers. The Bureau has in preparation a motion picture film showing how gonococcus smears and cultures are tested by the laboratory.

American Drug Manufacturers' Association

AT the annual meeting of the American Drug Manufacturers' Association, which will be held at the Greenbrier Hotel, White Sulphur Springs, May 5th to 8th, particular interest will be given the scientific section by the paper to be read by Prof. Vincent du Vigneaud, head of the Department of Bio-chemistry, Cornell University Medical School.

Prof. du Vigneaud's talk will be on "The isotopes as tools in modern metabolic investigations and their possible role in future studies of drugs."

Dr. Russel J. Fosbinder, Chairman of the Scientific Section, states that not only the chemists but the executives in the industry will be much interested in this talk,

because of the possible influence on various drug studies and the development of new biological substances and drugs which may be made possible by the use of these isotopes.

President S. DeWitt Clough is arranging a significant and interesting program for all the other section meetings.

Venereal Disease Control and the National Defense

UNITY of purpose—the control of venereal disease—characterizes two recent statements by the medical profession and by Federal and State agencies.

The first statement is the "Resolution on the Venereal Disease Program" adopted by the House of Delegates of the American Medical Association in June 1940. The second is "An Agreement by the War and Navy Departments, the Federal Security Agency, and State Health Departments on Measures for the Control of the Venereal Diseases in Areas Where Armed Forces or National Defense Employees are Concentrated".

"During the World War, venereal disease in the Army caused the loss of almost 7,000,000 days—equal to a full year's absence from duty for 19,000 men," Surgeon General Thomas Parran points out.

"Infections among military personnel originate in the civilian communities. Recent experience indicates that the venereal disease rate in a given military command reflects the efficiency of the venereal disease control program in adjacent communities. The same is true for industrial defense concentrations.

"Effectively carried out," Doctor Parran emphasizes, "the 8-point cooperative program will contribute substantially to the physical fitness of men in the armed and industrial defense forces, and should be of far-reaching importance to the future control of venereal disease. But this must be a cooperative program between health officers, military authorities, police agencies, citizens—and private physicians."

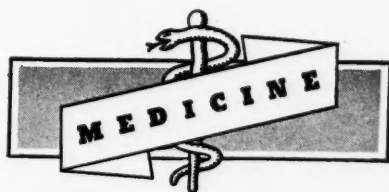
CONTEMPORARY PROGRESS

Pneumonia with Reference to Chemo- and Sero-Therapy

P. H. LONG and
J. W. HAVILAND

(Annals of Internal

Medicine, 34:1042, Dec. 1940) report the treatment of 190 cases of pneumococcus pneumonia in adults with sulfapyridine or sulfathiazole combined in some cases with serum. Only one patient was treated with serum alone, because the history showed that this patient had previously developed a drug rash with fever under treatment with sulfathiazole. The age distribution of the patients in this series, the incidence of major concurrent diseases, and the incidence of bacteremia on admission were essentially the same as in the previous five years, indicating that pneumococcus pneumonia in 1939-40 was as severe as in any year during the past five years. The routine dosage for oral administration in these cases with either sulfapyridine or sulfathiazole was: An initial dose of 4 gm. as soon as the clinical diagnosis of pneumonia was established, 1 gm. every four hours "day and night" until the temperature had been normal for forty-eight hours; then 1 gm. every six hours until resolution of the pulmonary lesion was "well under way"; then 0.5 gm. four times a day until the lungs were clear. If the rectal temperature had



not dropped to below 101° F on the day after institution of treatment, or if the concentration of the drug in the blood was less than 4 mg.

per cent, 0.06 gm. of either sodium sulfapyridine or sulfathiazole was given intravenously in addition to the usual oral dosage. In 42 cases, type-specific serum was employed in addition to the drug therapy. There were 15 deaths in this series, a mortality rate of 7.9 per cent, but 7 of these deaths took place within twelve hours after treatment was instituted, and in another 6 cases, death was due primarily to a major concurrent disease; there were therefore only 3 deaths "despite seemingly adequate treatment." Complications were rare; 2 patients had empyema on admission to the hospital, and 2 other developed empyema while under treatment; 10 patients developed sterile pleural fluid while in the hospital. This incidence of complications was the lowest in five years. The two drugs appeared to be equally effective in the treatment of pneumococcus pneumonia in adults. Sulfathiazole causes less nausea and vomiting than sulfapyridine but the incidence of drug rash and fever was higher with sulfathiazole. Type-specific serum is of definite value in association with drug therapy in the more severe cases.

COMMENT

This article should be in the possession of every practitioner who treats pneumonia. It is authoritative and covers the modern treatment of this disease. At the moment, sulfathiazole seems the drug of choice in treating pneumonia. It should not be forgotten that drugs of the sulfonamide group are dangerous and their action must be carefully checked at frequent intervals with blood studies.

M. W. T.

Sulfathiazole in the Treatment of Staphylococcic Septicemia

W. W. SPINK and his associates at the University of Minnesota Medical School and Hospitals (*Archives of Internal Medicine*, 67:25, Jan. 1941) report 25 cases of staphylococcic septicemia treated with sulfapyridine or sulfathiazole. The usual dose of either drug was 4 gm. as an initial dose and 1 gm. every four hours; equivalent doses of sodium bicarbonate were given at the same time; in one case sodium sulfapyridine was given intravenously. Of the 10 patients treated with sulfapyridine 4 died. Of the 15 patients treated with sulfathiazole, all recovered from their acute infection; one patient died subsequently from complicating myelogenous leukemia; 5 of these patients had previously been given sulfanilamide without effect. The authors conclude that sulfathiazole is superior to sulfanilamide or sulfapyridine in the treatment of staphylococcic septicemia; although this drug will "sterilize the blood stream," it will not eradicate the organisms from localized abscesses and metastatic lesions; therefore adequate drainage of such lesions is indicated in addition to drug therapy. Sulfathiazole caused nausea and vomiting in 3 patients and nausea alone in a fourth; dermatitis developed in 3 instances. The authors add a note stating that since this article was submitted for publication 4 additional cases of staphylococcic bacteremia have been treated with sulfathiazole, with 3 recoveries and one death; in the fatal case, "multiple abscesses were present throughout the entire body."

M. HAMBURGER and J. M. RUEGSEGGER (*Annals of Internal Medicine*,

14:1157, Jan. 1941) also report a series of 12 cases of staphylococcic septicemia treated with the thiazole derivatives of sulfanilamide—sulfathiazole and sulfamethylthiazole. Of these 8 recovered, and in all the fatal cases acute endocarditis was found at autopsy. In the same hospital there were 27 cases of staphylococcic septicemia treated in 1933 to 1939, and of these only 4 recovered; one of the 4 patients was treated with sulfapyridine. Treatment with sulfathiazole and sulfamethylthiazole has, therefore, definitely diminished the mortality from staphylococcic septicemia, unless complicated by acute bacterial endocarditis, "a condition which still resists the best efforts of the therapist." While in the 8 cases that recovered the blood stream was effectively cleared, there was no evidence that the drug therapy had an effect on local lesions. In 2 cases treated with sulfamethylthiazole, peripheral neuritis developed; this was when the drug was first employed and larger doses were used than were subsequently found necessary; "minor" toxic symptoms—nausea, vomiting, rashes—appeared to be less frequent with sulfamethylthiazole than with sulfathiazole.

COMMENT

In the diagnosis of pathogenic staphylococci more use should be made of the test with rabbit serum. Sulfathiazole is the drug of choice in treating these conditions. Anti-staphylococcic serum should not be forgotten in those patients who are sensitive to chemotherapy.

M. W. T.

Changes in the Electrocardiogram and in Cardiac Rhythm During the Therapeutic Use of Potassium Salts

H. J. STEWART and J. J. SMITH (*American Journal of Medical Sciences*, 201:177, Feb. 1941) report a study of 5 patients with cardiac disease in whom administration of potassium salts in therapeutic doses caused irregularities in the cardiac rhythm and electrocardiographic changes. In one case potassium chloride was given as a diuretic, in 3 cases potassium iodide was given in the treatment of cardiac syphilis, and in one as an expect-

torant. Clinically the following toxic manifestations were noted: Sinus tachycardia, supraventricular paroxysmal tachycardia, complete auriculoventricular dissociation with irregularity of the ventricles suggesting ventricular fibrillation, progressive first-degree heart block and auricular standstill; the auriculoventricular dissociation and auricular heart block are "rhythms of serious prognosis," but only one of these patients died. These symptoms except auricular standstill disappeared on discontinuing the potassium therapy. In 3 cases the electrocardiograms showed changes in the T waves and the R-T segments very similar to those observed in coronary occlusion with resulting myocardial damage. In one of these cases, the changes were reproduced a second time by the administration of potassium after full digitalization. Because potassium iodide is widely used in the treatment of cardiovascular syphilis and hypertension, it should be recognized that potassium may have a toxic effect on the heart—apparently on the sinus node and specific conducting systems—so that such treatment should be carefully supervised.

COMMENT

The question of the toxic effect of potassium iodide on the heart is extremely interesting and should be thought of when administering any salt of potassium. Considering the frequent use of potassium iodide, one wonders just how many patients have this toxic effect on their hearts. Further investigation is needed.

M. W. T.

Clinical Symptoms Associated with the So-Called Non-Pathogenic Amebae

M. M. ROTHMAN and H. J. EPSTEIN (*Journal of the American Medical Association*, 116:694, Feb. 22, 1941) found amebae other than *E. histolytica* in the stools of 406 patients living "in and about" Philadelphia; of these 179, or 44.1 per cent, showed definite improvement following eradication of the protozoa. *Endolimax nana* was the ameba most frequently found—in 184 cases, in 143 of which it was the only type of ameba present. Eighty patients, or 55.9 per cent of

those with this single type of ameba, showed definite improvement under treatment to eradicate the parasite; in 20 per cent. of this group the results were "excellent." *E. coli* was second in frequency, occurring in 172 cases, and as the only type of ameba in 99 cases; 45 patients, or 45.3 per cent of the latter group, showed some improvement under treatment. *Iodamoeba bitschlii* was found in 8 cases, always in association with other amebae; *Dientamoeba fragilis* was found in 5 cases, as the only ameba in 4 cases. All of these 4 patients improved under treatment. The most frequent symptoms in these cases were extreme tiredness and weakness, abdominal discomfort and constipation or diarrhea. Most of the patients were given one or two courses of carbarsone; this drug caused a rapid disappearance of the protozoa from the stools. In some cases emetine hydrochloride was used, but this was not so effective in eradicating the amebae. In cases in which a coexisting disease is present, only those symptoms due to the presence of the amebae are relieved by the eradication of the parasites. If no improvement occurs by the tenth day under treatment with carbarsone, it is "fairly certain" that the symptoms are not due to the presence of amebae. The findings in this series of cases indicate that all forms of amebae "have a pathogenic role"; therefore all types of amebic infection should be treated as pathogenic "until clinical evidence to the contrary can be proved."

COMMENT

This article clears the problem of the significance of the presence of non-pathogenic amebae. These amebae are often found in examinations of stools and the patients are not well. The therapeutic test with carbarsone is interesting.

M. W. T.

Chronic Ulcerative Colitis

J. J. STEFANO (*Brooklyn Hospital Journal*, 3:51, Jan. 1941) is convinced on the basis of his clinical observations that infection is not the primary cause of chronic ulcerative colitis, although it plays

a role as a secondary factor in the typical pathological picture. Primarily, the author maintains, chronic idiopathic ulcerative colitis is "a psychosomatic disease." Emotional conflicts, occurring usually at a time of life when responsibilities are greatest, affect the bowel musculature acting through the autonomic nervous system. This results in spasticity with excessive secretion of mucus and ultimately pathological changes in the mucosa, which may include hemorrhage and ulceration. As the disease continues, infection occurs secondarily, resulting in intensification of the inflammation and ulceration. Many of the bacteria which have been considered the cause of ulcerative colitis are normally present in the large intestine; but the "normal symbiotic balance of these organisms is broken" by the changes resulting from the muscle

spasm. The author is of the opinion that this "chain of events" is the usual one in chronic ulcerative colitis, although some cases may have "a different etiology and pathogenesis."

COMMENT

Mucous colitis is a psychosomatic disease and it remains to be seen what influence emotional conflicts have on causing chronic idiopathic ulcerative colitis. It is an interesting field for investigation. Occasionally an outstanding medical work appears over the horizon and I believe one of the most important contributions in medicine was published in 1939 by the Committee on Problems of Neurotic Behavior, Division of Anthropology and Psychology, National Research Council. The title is Mucous Colitis, A Psychological Medical Study of Sixty Cases, and it was by Benjamin V. White, Stanley Cobb and Chester M. Jones.

M. W. T.



Chemosurgery; a Microscopically Controlled Method of Cancer Excision

F. E. MOHS (*Archives of Surgery*, 42: 279, Feb. 1941) describes a method for removing accessible cancers "under complete microscopic control." Such microscopic control involves "the chemical fixation of the suspected tissues *in situ*" so that the fixed tissues can be excised "layer by layer" and examined microscopically as a guide to treatment. After long experimentation, a satisfactory fixative was found to be: Stibnite, 80 mesh sieve, 400 gm.; Sanguinaria canadensis, 1:00 gm.; Zinc chloride, saturated solution, 34.5 cc. This fixative paste is applied to the surface of the tumor to be removed; in some cases, if the tumor is not too large, the "dose" may be calculated so that the main mass of the tumor is fixed and can be removed twenty-four hours later. The fixative when applied is held in place by a cotton dress-

ing. If the application causes any discomfort, the patient is given an analgesic. After twenty-four hours, the layer of tissue that is well fixed is excised with a scalpel; this operation causes no pain and little if any bleeding, as a rule. Another application of the fixative is then made. At the next incision, if it is considered that most of the cancer has been fixed, a layer of tissue is excised and frozen sections of the entire plane examined; areas of cancer thus found are located "by means of maps drawn both on paper and on the lesion itself," and the fixative applied to these areas. This process is repeated until "a completely non-cancerous plane is reached." As the final fixed tissue layer separates from the underlying tissue, a granulation tissue, remarkably vascular and resistant to infection, is exposed which heals rapidly with the use of dressing of scarlet red-oxyquinoline sulfate (Bettman). This method may be used in the treatment of any tumor on the surface of the body or accessible "through a normal, a pathologic or an artificial orifice," unless vital structures are involved, or unless distant metastases contraindicate operation. It has been

employed in the treatment of cancer of the nose, ear, eyelids, face and lips, in neoplasms of the parotid gland, cancer of the extremities, carcinoma of the anus and lowest portion of the rectum, and in one case of carcinoma of the breast. Results are being followed up in 440 cases of primary malignant lesions in which this method has been used; the follow-up on these cases has not yet reached five years, but varies from one year to four and a half years. Of the 440 patients, 409, or 90 per cent, show no evidence of cancer at the time of this report; this group includes a considerable number of advanced lesions, and over one third had been previously treated surgically and by radiation without success. "This method requires special training and a specially equipped clinic."

COMMENT

To the general surgeon this chemosurgical method would seem to be somewhat limited in its clinical application. It would seem somewhat premature to evaluate the advantages of this procedure at this time. No doubt in the hands of surgical specialists, who contact great numbers of cases among which may be recognized and selected those peculiarly suitable to this type of treatment, the results herein recorded may justify the method. Certainly it requires of the medical attendant, patience, precise surgical technic, enthusiasm and no small amount of optimism.

The author refers to the end results in 440 treated cases. The elapsed time after operation is said to have varied from one year to four and a half years. The results would be more convincing if we knew how many cases were close to the four and one half year interval.

T. M. B.

Pectin in the Treatment of Various Types of Wounds

C. A. TOMPKINS and his associates at the Indiana University Medical Center (*Surgery, Gynecology and Obstetrics*, 72:222, Feb. 1, 1941) report the use of pectin in aqueous solution in the treatment of 75 cases of wounds of different types, including decubitus and trophic ulcers, osteomyelitis and other chronic discharging wounds, operative and traumatic wounds. In some cases a nickel pectin solution was used, in others a nickel-free pectin; no

difference was observed in the results. The pectin solution was used to saturate the dressings or applied directly to the lesion; dressings were changed often enough to keep them moist, usually at least once a day, but less frequently in osteomyelitis following sequestrectomy. This method of treatment resulted in rapid "cleaning" of the wound and the growth of highly vascular granulations; in the osteomyelitis cases, the time required for healing after sequestrectomy was reduced about one-fourth that with other methods employed at the Center. The pectin method was also of definite value in chronic lesions that resisted other methods of treatment, "in which a considerable growth of granulation tissue is required." As the pectin dressing does not appear to favor epithelization, some other method was employed when the wound was "clean" and granulation sufficient to fill it to the desired degree.

COMMENT

It would be unreasonable to accept pectin unreservedly as the answer to the surgeon's prayer in cases of chronic ulcer, protracted low grade infection of the tissues, or unhealed areas characterized by unhealthy and indolent granulations.

However, presented as it has been by the author of this article and with the authenticated details of its success in influencing favorably the pathological processes in selected cases, it arrests attention and invites a trial. It may well become a very important addition to our surgical armamentarium for the promotion of healing.

The list of similarly promising preparations is already long and formidable. Only time and repeated trial will indicate the most efficient and dependable agents, and the circumstances under which good results will be most surely obtained.

T. M. B.

Total Thyroidectomy for Heart Disease

E. C. CUTLER and S. O. HOERR (*Annals of Surgery*, 113:245, Feb. 1941) present a five-year follow-up study of 57 consecutive cases of total thyroidectomy for heart disease. The first operation was done in 1932; all of the 57 patients were operated on before the end of 1934. Most of these patients had failed to respond to

medical treatment and "presented a serious operative risk." Thirty-two patients suffered from intractable angina pectoris and 25 had some form of congestive heart failure. There were five postoperative deaths, 4 of which were "attributable to heart disease." In the group of 32 patients with angina pectoris, 27 lived more than six months after operation, and 26 of these showed some degree of relief from pain for six months or longer; 12 patients in this group were living at the end of the five-year period, and of these 8 had sustained relief. Of the 25 patients with congestive heart failure, 15 lived for six months or more after operation, and 12 of these had relief from symptoms; only 4 of these patients lived for five years, 3 of whom showed sustained relief; however, 2 of these 3 patients have died in the sixth year after operation from congestive heart failure. Results were best in this group in cases of rheumatic heart disease. The best results in this series of cases were obtained in angina pectoris without evidence of congestive heart failure or cardiac enlargement. Total thyroidectomy in such selected cases of intractable angina, the authors conclude, is "a worth while therapeutic measure."

COMMENT

During eight years there has been accumulating sufficient evidence to permit some evaluation of the results following total thyroidectomy for heart disease. Cutler and Hoerr, reviewing their experience, are impressed with their results sufficiently to continue their efforts, and to recommend the procedure. While some clinics have failed to get satisfactory results, the majority report the first year after operation a satisfactory degree of improvement in more than 50 per cent of the cases.

According to Berlin, et al., the procedure is said to be beneficial to a certain group of patients for whom life was quite intolerable before operation, because of complete invalidism due to congestive failure or severe repeated attacks of excruciating chest pains at bed rest or on slight exertion. The experience of past years will permit a more wise selection of patients in whom the incidence of improvement will be greater. Nevertheless one cannot estimate the unpredictable occurrence of circulatory accidents in these cardiac patients.

"Total thyroidectomy is not applicable to all patients with heart disease. There are a

few individuals who continue to be incapacitated in spite of all available therapy, whose symptoms are sufficiently severe to require additional therapy, and whose clinical status is quite stabilized at a low level of cardiac reserve. Total thyroidectomy offers this group an opportunity to assume again a life of comparative activity and freedom from discomfort. Without this procedure they would be totally 'incapacitated'."

Unwise selection of case, anything short of superlative surgical technic, lack of medical and surgical teamwork, disregard of the enormity of risks undertaken, will invite failure and bring discredit upon the procedure.

T. M. B.

The Surgical Treatment of Ulcerative Colitis

J. H. GARLOCK (*Annals of Surgery*, 113:2, Jan. 1941) states that at the Mount Sinai Hospital, New York, it is now agreed by the medical and surgical staff that surgical treatment of ulcerative colitis is indicated under the following conditions: Uncontrollable hemorrhage; acute ulcerative colitis with profound toxemia; impending perforation; chronic ulcerative colitis resistant to all forms of medical treatment; and segmental ulcerative colitis. In the surgical treatment of ulcerative colitis, the first requisite is "complete diversion of the fecal stream from the diseased bowel." Ileostomy is the procedure of choice in most cases, but this is to be regarded only as "the first step of a graded multiple-stage operation involving subtotal resection of the colon." In cases of segmental colitis involving the left colon and rectum, the use of transverse colostomy instead of ileostomy should be considered. In performing ileostomy, the author employs a two-inch subumbilical right rectus incision close to the midline; the patient is placed in the Trendelenburg position so that the loops of small bowel "fall away" and the terminal ileum can be easily visualized. Handling and manipulation of the colon is to be carefully avoided, as "the lightest touch" will often cause perforation of the diseased intestinal wall. The proximal ileostomy stoma is implanted in the original incision; the distal stoma in a one-inch right McBurney incision. Ileostomy has been done in 15 cases; there were 2 deaths in this series; in most cases ileos-

tomy was followed by cessation of hemorrhage in bleeding cases and by relief of symptoms and gain in weight. The operation is deferred until the maximum improvement from ileostomy has been obtained, usually six to twelve months. Subtotal resection of the colon is carried out in stages. If proctoscopic and sigmoidoscopic examination show that the lower sigmoid and rectum are free from disease, the first stage of the resection operation is an ileoproctostomy. When the rectum is diseased, the lower sigmoid and rectum are nevertheless left in situ "for possible future use in reestablishing intestinal continuity," and the subtotal resection of the colon is done in two stages, beginning on the left side. So far none of the patients in whom the resection operation has been completed have been under observation for a sufficient length of time to determine whether or not the rectum will heal sufficiently so that an anastomosis operation will eventually be possible. In the entire series of 25 cases in which some type of operation has been done for ulcerative colitis, there were 5 deaths, but in 4 cases "an error of technic or judgment" was responsible for the death. With increasing experience in the surgical treatment of ulcerative colitis, the author states such errors will become less frequent, and the mortality will be reduced. Two patients in whom ileoproctostomy was done prior to resection are well and have two to three normal bowel movements daily. In the other cases in which the resection was successfully completed, the patients are in good health.

COMMENT

In this article Dr. Garlock discusses the cases of intractable ulcerative colitis which resist every form of medical treatment and in which the pathologic process in the colon progresses to irreparable involvement. He estimates that 10 to 20 per cent of the cases fall into this group. Emphasis is placed on the importance of adequate medical treatment and consultation.

The success of surgical treatment rests primarily upon a proper evaluation of very important physiological and biochemical changes. Remedial measures must be insti-

tuted to combat alterations in plasma protein and electrolyte concentrations, inanition and marasmic states, water imbalance, stubborn anemias and the like.

The mortality in this series of 25 patients reached 20 per cent. It is reasonable to expect a reduction of this percentage with further improvement in technic and general surgical management. Dr. Garlock's exposition of his surgical technic in these cases is clear, complete and concise. This type of surgery obviously demands a high degree of surgical skill and technical ability. Best results will be insured where organization, teamwork and experience combine to meet the challenge. Lastly the preliminary medical care should be truly adequate and complete.

T. M. B.

Treatment of Gastric Ulcer Near the Cardia

K. KRATOCHVIL (*Zentralblatt für Chirurgie*, 67:2398, Dec. 21, 1940) in a series of 451 gastroduodenal ulcers—251 duodenal and 165 gastric—in which operation was done, found only 11 gastric ulcers near the cardia. As these ulcers cause severe pain, a radical operation is the treatment of choice, but this is not always possible on account of the age and general condition of the patient. If a radical resection is done, only a small gastric stump remains at the cardia; in some cases this is anastomosed with the duodenum by the Billroth I technique; in other cases a posterior gastroenterostomy is done. In 3 of the author's cases a palliative operation only was possible. In one case a jejunostomy resulted in marked improvement and roentgenological evidence of healing of the ulcer. In 2 cases the Madlener operation was done and the patients have been free from symptoms for six years. The Madlener operation consists in resection of the lower half of the stomach with the pylorus, leaving the ulcer *in situ*, but reducing the acid-producing area; the gastric stump is anastomosed with the duodenum by the Billroth I technique. In one case a Madlener operation had been done fifteen years previously, but a gastric cancer had developed at the site of the ulcer; radical operation was not possible in this case. This result is not to be interpreted as an argument against the Madlener operation, as this patient was free from

symptoms for fifteen years. The author is convinced that the use of the Madlener operation definitely reduces the operative mortality from gastric ulcer near the cardia, in the same way that Finsterer's exclusion operation has reduced the mortality from penetrating duodenal ulcer.

COMMENT

Gastric ulcer near the cardia constitutes a "poser" among surgical problems. Removal by subtotal resection of the stomach or by one of the less extensive operations is usually carried out if and when possible. The Madlener gastric resection allowing the ulcer to remain in situ is strongly recommended in this article.

The mortality is said to be lower than when the more radical procedures are adopted.

It would seem wise to your commentator, who incidentally has never done a Madlener operation, to keep this procedure in mind and to adopt it where more radical operation would be contraindicated.

The encouraging thing about gastric surgery is the wide array of perfectly plausible operative procedures from which the surgeon may choose that one which seems indicated and justified by consideration of all of the circumstances associated with each case.

Furthermore, the surgeon of today more frequently than not has another operative procedure "up his sleeve," if the first attempt is not completely successful.

T. M. B.



The Use of Sulfathiazole as a Urinary Antiseptic

H. F. HELMHOLZ (*Journal of Urology*, 45:135, Jan. 1941) has found in previous studies that sulfathiazole is more effective against *Streptococcus faecalis* infection of the urinary tract than sulfanilamide or sulfapyridine. Further studies have been made with many strains of six organisms frequently found in urinary tract infections—20 strains of *Escherichia coli*, 14 strains of *Aerobacta aerogenes*, 10 strains of *Proteus ammoniae*, 10 strains of *Pseudomonas aeruginosa*, 10 strains of *Streptococcus faecalis* and 5 strains of *Staphylococcus aureus*. The urine of a number of patients taking sulfathiazole in doses lower than the usual doses in respiratory tract infections ($\frac{1}{2}$ gr. (0.032 gm.) per pound (0.45 kg.) body weight per day) was tested against these various strains—some freshly isolated against urinary infections and some laboratory strains; the effect of different

degrees of alkalinity and acidity was also studied, at pH 5.5, 6.5 and 7.5. In this way it was found that sulfathiazole is much more effective against *Staphylococcus aureus* than against any other organism found in urinary infections; a concentration of 50 mg. per 100 cc. at any pH was sufficient to kill any of the strains of this organism in the urine and on the surface lining of the urinary passages. The effect of sulfathiazole on *Proteus ammoniae* "is second only" to its action on *Staphylococcus aureus*; in lower concentrations it is more effective at pH 6.5 and 7.5 than at pH 5.5; in a concentration of 150 mg. per cc., it is effective at any pH. This gives sulfathiazole a definite advantage over urinary antiseptics requiring an acid urine, as the difficulty of rendering the urine acid in *Proteus ammoniae* infections is "often insurmountable." The bactericidal action of sulfathiazole against *Streptococcus faecalis* was confirmed by these studies; higher concentrations are required than with *Staphylococcus aureus* or *Proteus ammoniae*; with this organism, sulfathiazole is more effective at pH 5.5 than in alkaline urine. Sulfathiazole was also found to be effective against the other three organisms studied—*Pseudomonas aeruginosa*, *Aerobacter aerogenes*, and *Escherichia coli*. With *E. coli* a concentration of the

drug of 200 mg. per 100 cc. at any pH renders the urine bactericidal or bacteriostatic in 96 per cent. of urinary specimens; with *Pseudomonas aeruginosa*, a concentration of 300 mg. per 100 cc. is required. Sulfathiazole is therefore a valuable urinary antiseptic as it is bactericidal against six of "the commonest bacteria found in urinary infections."

COMMENT

The outstanding merit of this study is its proof that acidification of the urine is not necessary for control of infection in these cases.

V. C. P.

Tuberculous Bacilluria; its Detection and Significance

J. G. NEGLEY and E. BOGEN (*Urologic and Cutaneous Review*, 44:791, Dec. 1940) discuss methods and results of urinary examinations with reference to tuberculous bacilluria, in more than 10,000 cases at the Olive View Sanitarium (Los Angeles County institution for tuberculosis) and more than 21,000 patients in the urological service of the Los Angeles County General Hospital. In both institutions, urine examinations are made routinely on admission, and at intervals thereafter. If the voided urine shows blood or pus cells "otherwise unaccounted for," acid-fast stains are employed, supplemented as necessary by guinea-pig inoculations. Guinea-pig inoculations are indicated in all doubtful cases, as this is the most sensitive test for tubercle bacilli. Unless there is clinical evidence of renal disease, cystoscopy and ureteral catheterization are usually done only when the bladder urine is positive. The incidence of tuberculous infection of the genito-urinary tract was naturally much higher at the Sanatorium than at the General Hospital. When the bladder urine shows tubercle bacilli, it is an indication of tuberculous infection somewhere in the genito-urinary tract; clinical findings may indicate a focus in the genital tract; the x-rays may indicate an infection of one or both kidneys; but the findings of tubercle bacilli in the ureteral specimen "is the pathognomonic evidence

of renal tuberculosis." In "fatal tuberculosis," miliary tubercles are often found in the kidneys and other viscera, but such renal lesions are not usually recognized clinically. The renal lesions that constitute "clinically recognized renal tuberculosis" are of the localized ulcerative type; such lesions may contain "almost pure cultures of tubercle bacilli" and large numbers of bacilli may be excreted in the urine; this infected urine is, of course, "a potent source" of infection of the bladder and other portions of the genito-urinary tract. This type of renal tuberculosis is usually unilateral at onset, and thus early diagnosis is of first importance, as surgical removal of the diseased kidney relieves the symptoms and prolongs life. Of 142 patients operated on, 88 are living, a mortality of less than 40 per cent.; of 138 patients not operated, 98, or 86 per cent., have died in the same period. Among the operated cases, only 25 per cent. of those in whom the disease was strictly unilateral have died; in 39 cases the disease was considered unilateral at the time of operation, but signs of contralateral disease developed later; 25 of these died in an average of two years after operation; 6 other patients with known bilateral disease were operated to relieve symptoms; all died within an average of eighteen months.

COMMENT

Again we have the site or sites, localization or extension, quiescence or activity, focal or systemic, clinical or laboratory diagnosis as the chief although not all the elements of study and treatment of urinary tuberculosis. "Too soon" is impossible. "Too late" is both possible and probable after oversight or neglect. Like the tide tuberculosis does not wait.

V. C. P.

Amyloid Disease Associated With Calculous Pyelonephritis

F. T. BOND (*Brooklyn Hospital Journal*, 3:21, January 1941) reports a case in an eighteen year old male who more than a year previously had had a mid-thigh amputation of the left leg because of osteomyelitis developing in a fractured femur, which caused general sepsis. When admitted to the Brooklyn Hospital, he

showed blood and pus in the urine and gave a history of passing small calculi; roentgenological examination showed stones in the right kidney pelvis; pyelotomy and nephrostomy were first done, followed by nephrectomy. Amyloidosis was found in the kidney removed, and a strongly positive Congo-red test indicated amyloid deposits in other organs, although there were no clinical symptoms of generalized amyloidosis. Following nephrectomy, the patient's general condition improved and repeated Congo-red tests showed progressive diminution of retention of the dye, indicating resorption of the amyloid deposits. In this case, the author believes the calculous pyonephritis was the chief factor in the causation of amyloidosis; he has found no record of any other cases in which non-tuberculous pyelonephritis induced or aggravated amyloidosis. Amyloidosis was formerly considered a progressive and necessarily fatal disease, but since the introduction of the Congo-red test, it has been recognized that recovery may take place; a few such cases have been reported in literature; the author's case is another instance of "apparent recovery from amyloidosis."

COMMENT

One well-reported case always has the merit of pointing the road. Amyloidosis is obscure and even the suggestion that it is passing from essentially fatal status into partially controlled status is worth while.

V. C. P.

Treatment of Urethral Strictures and Contractures of the Vesical Neck by Means of Diathermy Through a Sound

JOSEPH A. LAZARUS (*Journal of Urology*, 45:229, Feb. 1941) describes a method for the treatment of urethral strictures and contractures or median bars at the vesical neck. For many years, the author has held the opinion that strictures and contractures of this type "exert their deleterious effects," not only because of scar tissue formation, but also because of concomitant muscle spasm at the site of the stricture. One of the "primary" procedures used to cause absorption of scar tissue in the treatment of strictures is gradual dila-

tion by rigid instruments; heat is recognized as "an excellent antispasmodic agent." The author, therefore, combines these two agents "by directing the short-wave current to the stricture through a steel sound." A sound that passes the stricture easily is introduced into the urethra; a specially designed clip is attached to the handle of the sound and connected with "the active terminal" of a short wave generator. The inactive electrode plate is placed on the abdomen, well separated from the skin. The short wave machine is set at 3, and treatment continued for fifteen minutes; the patient does not feel any discomfort. When the sound is removed the bladder is irrigated with a warm 2 per cent. boric acid solution; then 100 cc. of a 1:3000 silver nitrate solution instilled. Treatments for tight urethral strictures are given at intervals of four days until a No. 24 F. sound can be passed easily, then at longer intervals according to the symptoms and results obtained in each case. In contracture of the vesical neck, treatments are given once a week for the first month, then at longer intervals as indicated. This method has been used in 4 cases of urethral stricture and 15 cases of contractures of the vesical neck and median bars. The results in urethral stricture have been so satisfactory, that the author now employs this method as a routine. In vesical neck contractures, the first improvement noted is an increase in the urinary stream and relief of nocturia; diurnal frequency is relieved more slowly. Persistent symptoms after transurethral resection are also relieved by this method of treatment, but it should not be begun until at least four weeks after the resection. In none of the cases treated has urethritis, epididymitis or cystitis developed.

COMMENT

This author is observing the one great caution of all electrotherapy—namely, mild currents gently applied. It is not many years ago that exactly the opposite method was applied. Failures were blamed on electrotherapy instead of on the wrong use of it.

V. C. P.

Staphylococcus Prostatitis Treated With Staphylococcus Toxoid

A. C. DRUMMOND (*American Journal of Surgery*, 51:393, Feb. 1941) reports 27 cases of prostatitis in men thirty to fifty years of age due to staphylococcus infection. In these cases both smear and culture of the prostatic fluid were "strongly positive" for the staphylococcus, which was the only or the predominant organism. Twenty of the 27 patients had a non-specific mucoid discharge; other symptoms noted (in order of frequency) were: pain in the lower lumbar and sacro-iliac regions; pain and fatigue in the calves of the legs worse at the end of the day; headache; terminal pain on urination; burning on urination; general malaise; posterior urethral discomfort; burning at the tip of the penis; perineal discomfort; pain in the inguinal region. Tenderness of the prostate was found in all cases and hypertrophy in some instances. All these patients were treated with staphylococcus toxoid (of 1000 unit strength), after a preliminary intradermal skin dose of .01 cc. on the forearm. If the reaction to this dose was 3x3 inches or less, the initial subcutaneous dose was .1 cc. of the toxoid; injections were given biweekly with doses increasing by .1 cc., unless some reaction occurred, up to 1 cc. This dose was then given weekly for two months. Prostatic

massage was carried out every ten days to promote drainage and to obtain prostatic fluid for examination. Reactions to the injections were not frequent or severe; there might be local reactions (soreness or induration), fever, rheumatoid pains in neck and shoulders, or headache. If any reaction developed while the dose was being increased, the subsequent doses were not increased until all symptoms disappeared. In 25 of the 27 cases, the symptoms were entirely relieved and there was "general constitutional improvement"—gain in weight, improvement in skin tone, increase in energy; the prostatic fluid became normal in cytology and the cultures negative for the staphylococcus. In the 2 cases in which the treatment failed, it became evident that the prostate was not the primary focus of infection; in one of these when the primary focus was successfully treated, the prostatic infection cleared up rapidly.

COMMENT

A study such as this is a milestone on the journey toward products specifically useful, each in its own sphere. I am reminded of a statement perhaps thirty years ago by the late Lewis A. Stimson, namely, that medicine was on the threshold of discoveries greater than those of surgery. We are in that era of discoveries.

V. C. P.



The Treatment of Pneumonia in Infants and Children

B. W. CAREY (*Journal of Pediatrics*, 18:153, Feb. 1941) reports the results of treatment of 613 cases of pneumonia in infants and children at the Children's Hospital of Michigan in ten months ending July 1, 1940. The great majority of these cases were due to the pneumococcus; type

XIV was the most frequent type in this series. As soon as the diagnosis of pneumonia was made, treatment was begun with sulfapyridine or sulfathiazole. In about half the cases in which the causative organism was found to be of a type for which a specific rabbit serum was available, serum was also given. The schedule of dosage was the same for both drugs; the initial dose was 0.25 to 0.5 grain per pound body weight; then from 1 to 1.5 grains per pound body weight were given each twenty-four hours in four or six doses. This dosage was continued for two to three days after the temperature fell to normal, then

reduced "about one-half" and given for another two or three days. The serum was given intravenously after testing the patient for sensitivity; it was diluted with physiological saline (1:10); two injections were given, one of 0.5 cc. for infants under two years of age and of 1 cc. for older children; the second dose was 4 to 8 cc.; reactions were infrequent and not severe.



The fatality rate was so low, in the cases of pneumococcus pneumonia, that no comparison can be made as to the relative value of the treatments employed. The total fatality rate for infants under two years of age was 4 per cent., and excluding those dying in less than twenty-four hours after admission, 2 per cent.; the fatality rate for children over two years of age was 1 per cent., excluding death within twenty-four hours after admission, 0.5 per cent. The average duration of the disease was less in those patients receiving sulfapyridine or sulfathiazole with serum, than in those receiving either drug without serum. There were 20 cases with empyema, but in each instance there was evidence of pleural fluid at the time of admission to the hospital; all of these patients recovered. In 63 cases the pneumonia was due to B-hemolytic streptococcus; sulfapyridine or sulfathiazole was used in the treatment of these cases. The fatality rate in both age groups, excluding deaths occurring within twenty-four hours after admission, was 3 per cent.; but the total fatality rate was much higher for the age group under two years than for the older age group. There were 15 cases of pneumonia due to *Staphylococcus aureus*; 8 patients were treated with sulfapyridine and all died; of the 7 patients treated with sulfathiazole, 2 died, one ten hours after admission, the other after seven days of intensive therapy. Sulfathiazole produced definitely fewer toxic reactions than sulfapyridine; because of this and its greater effectiveness against staphylococcus, and equal effectiveness against pneumococcus and streptococcus, it is "the drug of choice" in pneumonia in children.

COMMENT

Evidence has shown that sulfathiazole is of less value in streptococcal infection, but of greater value in staphylococcal and pneumococcal infections. Sulfathiazole is quite rapidly excreted from the body, hence, better results are obtained if it is administered at three or four hour intervals.

Recently, I have had a limited experience with another chemotherapeutic agent, sulfadiazine, in the treatment of pneumonia. Its chemistry was reported first by Roblin et al., (1.). Feinstone et al. (2.) found that its chemotherapeutic activity in mice was equal or superior to other common sulfonamides against hemolytic streptococci, pneumococci, staphylococci and Friedlander's bacilli; also its toxicity in monkeys was less.

The characteristics of sulfadiazine are: 1. Practically insoluble in water. 2. Readily soluble in body fluids. 3. The conjugated form is three to four times more soluble in urine than the conjugated form of the other sulfonamides. 4. Blood concentrations at a high level are easily obtained. 5. Relatively no conjugated form in the blood. 6. No toxicity noted in therapeutic doses. 7. Complete excretion from the body requires over 48 hours.

Peterson et al. (3.) point out that there is a consistently high concentration in the spinal fluid following oral administration at four hour intervals, averaging two-thirds or more of the blood concentration. The pleural exudates were higher than the blood levels taken at the same time. If a local anesthetic containing an arylamino group is used, a false high concentration figure will be obtained.

Six cases of pneumonia in children responded with a normal temperature within 24 hours after treatment was begun. The doses averaged 3/4 grain per lb. body weight for 1st. 24 hours, then 1/2 grain for the next 24 hours. This dosage gave a blood concentration of between 8.6 mgm. per cent and 18.6 mgm. per cent. No toxic symptoms were observed. Two of these cases had bulging ear drums, which returned to normal without myringotomy. Further observations in children with this drug should be made.

1. Roblin, R. O., Jr., Williams, J. H., Winnek, P. S., and English, J. P.: *Journal American Chemical Society*, 62:2002, Aug. 1940.

2. Feinstone, W. H., William, R. D., Wolff, R. T., Huntington, Evelyn, Crossley, M. L.: *Bulletin of the Johns Hopkins Hospital*, 67:427-456, December, 1940.

3. Peterson, O. L., Strauss, Elias, Taylor, F. H. L., and Finland, M.: *American Journal Medical Sciences*, 201:357, March, 1941.

O.L.S.

Sulfanilylguanidine in the Treatment of Acute Bacillary Dysentery in Children

E. K. MARSHALL, JR. and his associates at Johns Hopkins University (*Bulletin of Johns Hopkins Hospital*, 68:94,

January 1941) have previously described the preparation of sulfanilylguanidine and their experimental work with the drug, which showed it to be an effective chemotherapeutic agent against intestinal infection. In this article they report its clinical use in 17 cases of acute bacillary dysentery in children, in which the diagnosis was confirmed by the recovery of the dysentery organism from the stools. In 7 cases treatment was begun promptly after admission to the hospital and on or before the third day of the disease; all of these patients were young children under five years of age and all were seriously ill. In all cases the temperatures fell to normal within twenty-eight hours, and often much sooner, and there was a marked improvement in the child's general condition within twelve to thirty-six hours. In cases in which the drug was given on a four hour schedule, the diarrhea was checked in one to three days; in 2 cases in which the drug was given on a twelve hour schedule, the stools did not become normal until the sixth and eighth day respectively. In children in whom treatment was begun later, on the fourth to the fourteenth day of the disease, the results were not so uniform; some of these children showed as prompt and as striking improvement as the first group, but in most instances the course of the disease did not appear to be influenced by the use of sulfanilylguanidine. The monohydrate form of the drug was used in all cases; the initial dose was 0.1 to 0.2 gm. per kg., while maintenance dosage ranged from 0.1 gm. per kg. every eight to twelve hours to 0.05 gm. per kg. every four hours. Eight other children with other forms of gastro-intestinal disease, including 3 with symptoms of acute dysentery but without dysentery bacilli in the stools, were treated with sulfanilylguanidine; only one (with acute dysentery) showed definite improvement. No definite toxic effects were observed in any of these cases; with one exception, none of these children received the drug for more than fourteen days, the fluid intake was kept adequate, and a careful watch was kept for any evidence of renal insufficiency. Determinations of concentration of the drug

in stools and blood showed that a dosage adequate "to insure saturation of the intestinal contents with the drug" gave a very low blood concentration. The results obtained, the authors consider, "are sufficiently encouraging to warrant further clinical trial of the drug."

COMMENT

Further support of the value of sulfanilylguanidine in acute bacillary dysentery has just appeared in a paper by George M. Lyon (1). He reports 23 cases treated with sulfanilylguanidine and 23 controls, with the usual recognized methods. In 18 of the patients receiving sulfanilylguanidine, there was marked improvement within 72 hours, as indicated by: normal temperatures, lower leukocyte count, general clinical improvement, marked reduction of the diarrhea with accompanying disappearance of the blood, pus and mucus. It can definitely be said that this chemotherapeutic agent promises more than any other method of therapy against bacillary dysentery.

O.L.S.

REFERENCE

Lyon, George M., M. D.: *West Virginia Medical Journal*, 37:54-66, February, 1941.

On the Prevention of Hemorrhagic Disease of the Newborn by the Administration of Cow's Milk During the First Two Days of Life

L. SALOMONSEN (*Acta paediatrica*, 28:1, Oct. 15, 1940) has found that the prolongation of the coagulation time, characteristic of the newborn infant, is more marked in winter and spring than in the summer months. As shown by various investigators and confirmed by the author's findings, the prolongation of coagulation time in the newborn is due to the low prothrombin level of the blood. In previous studies conducted during the month of August, the author had found that the administration of cow's milk to newborn infants for the first four days of life shortened the coagulation time and raised the blood prothrombin to practically normal levels. Another series of cases was studied in the months of January and February (when the prolongation of coagulation time in the newborn is most marked). In this study, 10 infants were fed on mother's milk, starting feedings at the usual time (after the first twenty-

four hours); 10 infants were given cow's milk in addition for the first two days of life, beginning when the infant was two hours old; 20 gm. of cow's milk diluted one-half were given three times on the first day, and 40 gm. three times on the second day. In the infants fed on mother's milk, there was a marked prolongation of coagulation time, especially on the third and fourth day of life; spontaneous hemorrhages occurred in 2 infants in this group. In the second group, the coagulation time was definitely lower, even on the first day of life, and throughout the first week. It is noted, however, that this treatment did not reduce the coagulation time to the same normal level as in the August series. There were, however, no hemorrhagic symptoms in any of these cases in the winter series. Since Nov. 1, 1939, all newborn infants in the author's clinic have been given cow's milk in the first two days of life in addition to the usual feedings; in six months 1005 children have been born and there "has not been a single clear case" of hemorrhagic disease. For the previous five years in the same six months of the year, there were 40 cases of hemorrhagic disease of the newborn in 4783 living infants at the same clinic (an incidence of 0.84 per cent.). It is probable that early feeding with mother's milk, in the first few hours of life, would have the same effect; but as this is not often practicable in a large clinic, the administration of small amounts of cow's milk in the first two days of life seems to be "the safest and most practicable arrangement." The advantage of the early feeding of milk to the newborn, the author believes, is that it "induces a bacterial flora in the infant's previously sterile intestinal tract and therefore stimulates an endogenous production of vitamin K."

COMMENT

The observations of L. Salmonsén are very interesting and add another link in the chain fighting hemorrhagic diseases of the newborn.

With vitamin K available to all physicians in this country, in pure form, it seems better to give it to the expectant mother before delivery than to attempt the endogenous manufacture of it in the infant, indicated by Salmonsén.

I do not think it is advisable to feed milk during the prelacteal period, unless there are specific indications for its administration.

O.L.S.

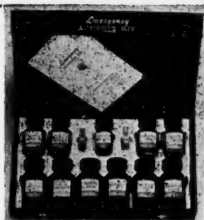
Amebiasis in Infants and in Children

K. M. HOWELL and E. W. KNOLL (*American Journal of Diseases of Children*, 61:54, Jan. 1941) report a survey of amebic infection in children at the Sarah Morris Hospital in Chicago in 1937 to 1939 where a similar survey of adults had been made. Of the 408 infants and children examined, 13, or 3.18 per cent., were found infected, while in 1,044 adult patients, the incidence was somewhat higher (5.2 per cent.). In addition 5 other children with amebiasis had been previously treated at the hospital (1929 to 1936). The illness of only 2 of these children occurred before the Chicago epidemic of amebiasis. The ages of these children varied from 8 months to thirteen years. The stools from 105 children at a Chicago orphanage were also examined, and 5, or 4.8 per cent., showed *E. histolytica*, a slightly higher incidence than that found among children at the Hospital. A review of recent literature on amebic infection in children in addition to their own findings leads the authors to conclude that amebiasis can occur in infants and children of any age and in any locality; the incidence of amebiasis in children as well as in adults in the United States has evidently increased since 1934. Of the children admitted to the Sarah Morris Hospital, in whom the diagnosis of amebiasis was made by positive stool findings, some showed acute symptoms of abdominal pain, nausea and fever—symptoms that might simulate acute appendicitis, typhoid or bacillary dysentery. Others gave a history of recurrent "intestinal upsets" or "colitis" of an atypical nature, for some years. Still others had no gastro-intestinal symptoms, but were admitted to the Hospital for other conditions, and the amebic infection demonstrated by stool examination during the survey; some of these children, however, gave a history of having had one or more attacks of

—Concluded on page 196

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MEDICAL TIMES, APRIL, 1941

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GOOD NEWS! Böhler Being Reprinted!

Böhler— TREATMENT OF FRACTURES

By Dr. Lorenz Böhler, Director of the Hospital for Accidents, Vienna; Lecturer in Surgery, University of Vienna. Translation (1935) from the fourth enlarged and revised German edition, by Ernest W. Hey Groves, M.S., F.R.C.S., Emeritus Professor of Surgery, University of Bristol. Buckram binding, gold stamped, $6\frac{1}{2} \times 10\frac{3}{4}$, 588 pages, 1059 illustrations, original price, \$12.00, 1941 unrevised reproduction, \$10.00.

BEFORE the war we were arranging with Dr. Lorenz Böhler of Vienna for a new edition and translation of his famous work, but war conditions have made it impossible to carry out those plans at present. Meanwhile because of the widespread adoption of the Böhler methods in American hospitals and clinics, the profession, especially younger members, has been greatly handicapped for several years by inability to obtain copies of the current fourth German edition, edited and translated in 1935 by Ernest Hey Groves, editor of the British Journal of Surgery. Secondhand copies have been selling at a premium. Few owners would sell, the book being far too valuable to part with.

In response to insistent demands especially from physicians in or preparing for military service, we are now making a reproduction of the Groves translation of the fourth edition, to be available soon. *Send in your advance order now at \$10.00 per copy.* The original price was \$12.00. Let it be clearly understood this is not a new revised edition and with war conditions as they are it will probably be a long time before a complete

new revised edition can appear in English. Meanwhile, all the details and principles so very necessary to a proper understanding and successful carrying out of the Böhler methods can be found in the Groves translation, which includes later experience of Böhler with fractures of the spine and of the neck of the femur, than appeared in the fourth German edition. Before the war about 400 surgeons from many countries attended the Böhler Clinic each year. You cannot go now but you can get the essential information for \$10.00. If you do not have a copy this is your opportunity. The supply is limited. *Better order now.*

"Few books on the subject have presented the material as clearly and concisely as this one. Almost none has had the large number of beautiful and constructive illustrations. The book represents the outcome of the experience of nineteen years of treatment of more than 10,000 cases of fractures. When the history of fractures is written, Böhler's name will appear prominently, establishing a Böhler era or milestone. This book will rank high with all traumatic, orthopedic and general surgeons."—*Journal of A. M. A.*

"Few men are as well qualified to write on the treatment of fractures as Dr. Lorenz Böhler. The entire book is readable, logical, and honest, and to be recommended without reservation."—*Surgery, Gynecology and Obstetrics.*

"Whether agreeing with all of Dr. Böhler's methods or not, everyone treating fractures will want to, and in fact should, study this work thoroughly."—*American Journal of Surgery.*

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MEDICAL TIMES, APRIL, 1941

Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning *Book News* should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

Surgery of the Abdomen

Abdominal Operations. By Rodney Maingot, F.R.C.S. Volumes I and II. New York, D. Appleton-Century Company, [c. 1940]. 1385 pages, illustrated. 8vo. Cloth, \$18.00 per set.

THE subject matter of abdominal operations is covered in two volumes comprising about 1400 pages. The work is beautifully illustrated in a way which makes the text easy of comprehension. The illustrations are not diagrams but are excellent original drawings by Miss Lari-vière, a pupil of Max Brödel, which give to the student or surgeon a better conception of the problem involved. Every structure in the abdominal cavity is considered in turn with the most modern conception of pathology, and at the same time, the most modern accepted therapy. Combined with these advantages, the author has shown splendid judgment in the manner in

which he has selected what he considers the best operative procedures.

Any reviewer of this work actively engaged in the practice of surgery, would feel that it deserves a prominent place on the desk where he works. References are placed immediately after statements in the text relating to them, and for this reason give additional facilities to the investigator for further and more detailed study of a problem. The book is commendable from every viewpoint, and we do not hesitate to recommend it for both the master surgeon and his apprentices.

ROBERT F. BARBER



Classical Quotations

• I have made it a principle to limit myself to simple colostomy as a rule in cases of ileus due to intestinal cancer. I would undertake the two stage resection only in exceptional cases where conditions are especially favorable.

Johann von Mikulicz-Radecki
Arch. f. klin. Chir., 69:28-47, 1903.

Obstetrics for the General Practitioner

Obstetrics in General Practice: By J. P. Greenhill, M.D. Chicago, The Year Book Publishers, [c. 1940]. 448 pages, illustrated, 8vo. Cloth, \$3.50.

THIS is a suitable companion volume for GREENHILL'S *Office Gynecology*.

Practicality is its byword, and it reflects the sound judgment and practice of a renowned obstetrician.

All aspects of antepartum and postpartum care are discussed. Normal delivery is well handled, and the complications of pregnancy are given careful consideration.

Of special interest is the chapter on local infiltration anaesthesia in obstetrics. In this chapter the advantages of direct infiltration are enumerated along with the indication for its use. Another worthwhile chapter is the one reviewing the use of pituitary extract and ergot.

This text is recommended to all busy practitioners—a careful perusal will be of untold value to them.

JAMES F. BUTLER

Medicine in China

The Chinese Way in Medicine. By Edward H. Hume. Baltimore, Johns Hopkins Press, [c. 1940]. 189 pages, illustrated. 8vo. Cloth, \$2.25.

THIS book contains the Noguchi lectures presented by Edward H. Hume at the Institute of the History of Medicine of Johns Hopkins University. It consists of three parts. The first deals with the universe and man in Chinese medicine and summarizes the philosophical basis of Chinese medicine. The second part reviews some of the Chinese medical classics, and the third section indicates the distinctive contributions of Chinese medicine.

GEORGE ROSEN

Trauma of Nervous System

Injuries of the Nervous System Including Poisonings. By Otto Marburg, M.D. and Max Helfand, M.D. New York, Veritas Press, [c. 1939]. 213 pages, illustrated. 8vo. Cloth, \$3.00.

THIS book is written with the intent of presenting a short survey of the causes, symptoms, diagnosis, and treatment of brain and spinal cord injuries as well as injuries of the peripheral nerves. It includes also occupational injuries such as

electrical, Caisson disease, and industrial poisonings.

The authors regard the work merely as a framework and quote the literature to enable the student to make up the deficiencies.

In reading the book one is struck with the brevity of some of the important subjects, the paucity of photo-micrographs, and the emphasis laid upon foreign literature. One gets the impression that inadequate references are made to American clinicians as well as neuropathologists who have done so much to elucidate the different aspects of injuries to the nervous system.

The work as a whole lacks the thoroughness which characterizes some

recent books published by American authors on the same subject.

IRVING J. SANDS

The Food of Americans

The American and His Food. A History of Food Habits in the United States. By Richard O. Cummings. Chicago, University of Chicago Press, [c. 1940]. 267 pages, illustrated. 8vo. Cloth, \$2.50.

THIS book is really a history of food habits and food trends in the United States of America for the past two centuries. It covers the habits of immigrants in various states and their adaptability to environment, climate and social trends.

The author gathers a large part of his material from travelogues and newspapers for general information, and from government archives for scientific data.

There is a bit too much stress on the food distribution for relief by government agencies. The factors involved in food economics in depression years, and the role played by the Department of Agriculture take up much space.

The book is very well written and is interesting reading.

MORRIS ANT

Handbook on Emergency Treatments

Manual of Medical and Surgical Emergencies. Edited by J. C. Geiger, M.D. San Francisco, J. W. Stacey, Inc., [c. 1940]. 199 pages. 8vo. Cloth, \$2.50.

UNDER the editorship of Dr. Geiger, fifty-four specialists have contributed to this manual of 200 pages, which includes a wide range of emergency treatment. The subject is covered under the general divisions of General Considerations, which is introduced by an interesting account of the early days of the San Francisco Emergency Hospital Service, Surgical and Medical Emergencies. As might reasonably be expected, in spite of the modest size of the book, occasional nonemergency discussions do creep in, but most of the subjects are treated with care and clearness. Conceding differences of opinion in the matter of indications for the kind of treatment to be used, the practice of medicine would be on a high plane of efficiency if all practitioners were familiar with the concentrated suggestions made by these fifty-four experts, who have, necessarily, but a few pages to put across their messages.

JOSEPH RAPHAEL

The Life Story of a Great Pediatrician

L. Emmett Holt: Pioneer of a Children's Century.
By R. L. Duffus and L. Emmett Holt, Jr. New York, D. Appleton-Century Company. [c. 1940]. 295 pages, illustrated. 8vo. Cloth, \$3.00.

THIS simple narrative of the outstanding events in the life of Dr. Holt leaves the reader with the knowledge that here was a man whose place in Pediatrics was founded on real achievement. The photograph of Dr. Holt in the front of the book, taken in 1900, shows him as many of us remember him in the early days of this century, when he succeeded Dr. Jacobi as Professor of Children's Diseases in the College of Physicians & Surgeons (Columbia University).

Before this period Dr. Holt had written his book for mothers and nurses, *The Care and Feeding of Infants and Children*. This useful work for many years has been kept revised and up to date, and still is a standard guide for mothers. It has passed through many editions, and has been translated into several foreign languages.

He had also written his textbook for practitioners and medical students, published first in 1896, *Diseases of Infancy*

and *Childhood*, and this was unique at the time, for it contained pathological material, especially on pneumonia, unsurpassed for many years. This book also has stood the test of time, passed through many editions, and as revised today is still a standard textbook.

The following from page 6 of the book under review can be subscribed to wholeheartedly: "Emmett Holt will be long remembered for his tangible gifts to his generation. He attained in his field a position comparable with that of Osler in general medicine. But he is also a symbol of importance in American life. He represents the transmutation of an old and perhaps outworn tradition into the gold of the new era."

He was a student interne at the Hospital for Ruptured and Crippled under Gibney, and in 1881 he opened an office for the private practice of medicine. Followed staff appointments to the Northwestern Dispensary, New York Infant Asylum in Mt. Vernon, Nursery and Child's Hospital, Babies' Hospital, Rockefeller Institute for Medical Research and others. At the Babies' Hospital Dr. Holt and two surgeons, Dr. William A. Downes and Dr. Richard Bolling, wrote a never to be forgotten chapter of medical history by lowering the mortality from pyloric stenosis tremendously. Their methods are still followed.

He was one of the founders of the *Archives of Pediatrics*, the American Pediatric Society and of the Child Health Organization, the latter afterwards merging with the American Child Hygiene Association to become the American Child Health Association.

But for those who want an insight into the intimate character of the man, his many letters throughout the book furnish this insight. They show him to have been very human and a devoted husband and father.

His death occurred from a heart attack in China where he went to give lectures and clinics for the Peking Union Medical College.

ARCHIBALD D. SMITH

Freudian Practice

From Thirty Years with Freud. By Theodor Reik. Translated by Richard Winston. New York, Farrar & Rinehart, Inc., [c. 1940]. 241 pages, illustrated. 8vo. Cloth, \$2.50.

REIK is one of the outstanding men in the psychoanalytic movement. His chief preoccupation is primitive religions and the application of psychoanalysis to the elucidation of folklore, ritualistic practices, and kindred subjects. His book is partly an evaluation of Freud, the man, and the psychoanalytic method as applied to various problems that present themselves to the analyst. Among the subjects treated are the latest that engaged the attention of Freud—"Civilization and its Discontents," "The Future of an Illusion". A chapter is devoted to psychoanalysis of Dostoyevsky and various other heterogeneous subjects. In the late years Freud ventured into fields usually trod by philosophers, and has thereby stirred up some criticism. However, even here the master mind is revealed in whatever he has undertaken. We gladly recommend the book to all interested in keen minds and their observations.

JOSEPH SMITH

Textbook for the Detail Man

Detailing the Physician. Sales Promotion by Personal Contact with the Medical and Allied Professions. By Tom Jones. New York, Romaine Pierson Publishers, Inc., [c. 1940]. 214 pages. 8vo. Cloth, \$2.75.

THIS reviewer has found Mr. Jones's textbook an interesting document to read, as it makes objective the sales strategy and tactics to which the doctor is subjected by the makers of medical supplies of one sort or another and permits him to reach better conclusions as to the value of this intermediary service to the profession.

A reading of this book, in the reviewer's opinion, will conduce to a better understanding of the reciprocal interests usually involved and promote mutually profitable relations. The author's sense of humor adds much to the effectiveness of his points. The doctor will be benefited psychologically by studying this kindly but candid analysis of his own personality.

"The manufacturing pharmacist of today has made and is continuing to make contributions to the relief of human suffer-

ing by the establishment and maintenance of research departments that work in co-operation with important medical institutions." How the detail man is selected and trained today for his "highly technical and arduous vocation", in which he serves as a liaison officer between manufacturer and doctor, is a revealing feature of the book.

Ethical considerations are stressed throughout, in line with all the aims and procedures of the front line industries in this field. It is with this type of producer that the author has gained his experience and qualifications, passing from subaltern in the field to high posts in the general staffs.

ARTHUR C. JACOBSON

More International Clinics

The New International Clinics. Original Contributions: Clinics; and evaluated reviews of current advances in the medical arts. Edited by George M. Piersol, M.D. Volume IV, New Series Three. Philadelphia, J. B. Lippincott Company, [c. 1940]. 326 pages, illustrated. 8vo. Cloth, \$3.00.

A NUMBER of up-to-date articles can be found in this latest volume of the "Clinics." Samuel Levine discusses the mechanism of Ewart's Sign; Heparin is covered by Doane; Durant has a useful paper on the esophagus as an aid to cardiac diagnosis. Papers on a typical pneumonia, sulfa-pyridine and various gastro-intestinal topics bring up practical points. Horine presents a fine paper in which he reviews intravenous quinine as a treatment of paroxysmal supraventricular tachycardias.

ANDREW M. BABEY

A Medical Missionary in Japan

A Pioneer Doctor in Old Japan. The Story of John C. Berry, M.D. By Katherine F. Berry. New York, Fleming H. Revell Company, [c. 1940]. 247 pages, illustrated. 8vo. Cloth, \$3.00.

A PIONEER DOCTOR IN OLD JAPAN by Katherine Fiske Berry, can scarcely be excelled in the splendid picture it gives of early Japan as it relates the remarkable story of Dr. John C. Berry, one of the greatest of Japan's Christian missionaries.

It was in 1872, about twenty years after Admiral Perry had opened Japan's door to western civilization, that Dr. Berry, hav-

ing accepted the call to be physician to the young Japan Mission, embarked with his young bride for the unknown. There he found the challenge of a nation emerging from mediaevalism. With rare tact, devotion and consecration to his task, the contribution he made to the establishment of medical work, prison and social reforms remains to this day a matter of eternal gratitude both to the government and to those whose lives he touched. In 1912, in recognition of these services, he received the signal honor of having conferred upon him by the Emperor the Imperial Order of the Sacred Treasure of the Third Class. The general love and esteem in which he was held is well expressed by Miss Berry when, on a return trip to visit the land of her birth, she remarks that it was truly, "Okage de, or through the gracious influence of your shadow" that she received numberless courtesies and favors from his host of friends.

Filled with humor and a warm and human touch, the book is not only significant but engaging.

CLARA BURN

A Study in Personality

Human Nature in the Light of Psychopathology. By Kurt Goldstein. Cambridge, Massachusetts, Harvard University Press, [c. 1940]. 258 pages. 12mo. Cloth, \$2.50.

THIS is a series of lectures delivered at Harvard University, leading to the author's conception of the nature of man. In developing his thesis, the author presents data on the behavior of patients with cortical pathology. Their attitude towards specific problems is analyzed. In the case of speech, for example, there is an impairment of the abstract attitude in patients with brain lesions. These are known as aphasias. The author specifically discusses amnesic aphasia. The role of anxiety, fear, etc. in life is discussed. There are

also chapters on the motives actuating human behavior, structure, personality, and the individual in relation to others. In the concluding chapter the question is raised as to why humans cannot develop a better ordered society, and an attempt is made to show a way for future hope. There are notes at the end of the book relating to each individual chapter.

STANLEY S. LAMM

Early Industrial Medicine

Diseases of Workers. The Latin text of 1713, Revised with translation and notes by Wilmer C. Wright. Chicago, University of Chicago Press, [c. 1940]. 549 pages, 8vo. Cloth, \$5.00.

THE present volume is an English translation of the first treatise on occupational medicine. It is the work of Bernardino Ramazzini (1633-1714) professor at Modena and Padua, which first appeared in 1700, and went through numerous editions. Not only is it a medical classic, but likewise an extremely interesting picture of social and industrial conditions in Italy at the time. The translation is by Wilmer Cave Wright, known for her previous translation of the *De Contagione* of Fracastorius.

GEORGE ROSEN

Diagnostic Medicine

Modern Diagnosis. The Practitioner Handbooks. Edited by Sir Humphrey Rolleston and Alan Moncrieff. London, E. C. 4, Eyre & Spottiswoode, 6 Great New Street, [c. 1940]. 286 pages, illustrated. 8vo. Cloth, 12/6.

CLINICAL and laboratory diagnosis are covered in this next volume of the Practitioner Series. Much of interest will be found in it, viz: the knee jerk in disease; the tongue, nails, and face in disease. The section on laboratory tests is sound and conservative. Especially good is Robertson's review of the basal metabolic rate.

ANDREW M. BABEY

BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

The Nineteen Forty Mental Measurements Yearbook. By Oscar Krisen Buross, Editor. Highland Park, N. J., The Mental Measurements Yearbook, [c. 1941]. 8vo. Cloth, \$6.00.

Electrocardiography in Practice. By Ashton Graybiel, M.D. and Paul D. White, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 319 pages, illustrated. Oblong 8vo. Cloth, \$6.00.

Diseases of the Digestive System. Edited by Sidney A. Portis, M.D. Philadelphia, Lea & Febiger, [c. 1941]. 952 pages, illustrated. 8vo. Cloth, \$10.00.

The Endocrine Function of Iodine. By William T. Salter. Cambridge, Harvard University Press, [c. 1941]. 351 pages, illustrated. 8vo. Cloth, \$3.50.

What are the Vitamins? By Walter H. Eddy, Ph.D. New York, Reinhold Publishing Corporation, [c. 1941]. 247 pages, illustrated. 8vo. Cloth, \$2.50.

Photodynamic Action and Diseases Caused by Light. By Harold F. Blum, Ph.D. New York, Reinhold Publishing Corporation, [c. 1941]. 309 pages, illustrated. 8vo. Cloth, \$6.00.

Textbook for Male Practical Nurses. By Gayle Colman, R. N. New York, Macmillan Company, [c. 1941]. 215 pages. 12mo. Cloth, \$2.00.

A Boy Grows Up. By Harry C. McKown and Marion LeBron. New York, McGraw-Hill Book Company, [c. 1940]. 299 pages, illustrated. 8vo. Cloth, \$2.00.

The Therapy of the Neuroses and Psychoses. A Socio-Psycho-Biologic Analysis and Resynthesis. By Samuel H. Kraines, M.D. Philadelphia, Lea & Febiger, [c. 1941]. 512 pages. 8vo. Cloth, \$5.50.

Masochism in Modern Man. By Theodor Reik. Translated by Margaret H. Beigel and Gertrud M. Kurth. New York, Farrar & Rinehart, Inc., [c. 1941]. 439 pages. 8vo. Cloth, \$4.00.

Manual of Clinical Chemistry. By Miriam Reiner, M.Sc. New York, Interscience Publishers, Inc., [c. 1941]. 12mo. Cloth, \$3.00.

Anus, Rectum, Sigmoid Colon: Diagnosis and Treatment. By Harry E. Bacon, M.D. Second edition. Philadelphia, J. B. Lippincott Company, [c. 1941]. 8vo. Cloth, \$8.50.

Doctors and Doctors: Wise and Otherwise. On the Firing Line Fifty Years. By Charles M. Rosser, M.D. Dallas, Mathis, Van Nort & Company, [c. 1941]. 8vo. Cloth, \$3.50.

CONTEMPORARY PROGRESS

—Concluded from page 188

abdominal pain, diarrhea, nausea and vomiting. Whether intestinal symptoms were present or not, all children showing *E. histolytica* in the stools were treated with emetine or carbarsone; the latter drug was employed in all but the first two cases (1929 and 1931). Children were not discharged from the hospital until the stools were repeatedly negative for *E. his-*

tolytica, and any symptoms present had been relieved. Yet there were several readmissions with new infections, indicating that children have neither a natural nor an acquired immunity to *E. histolytica*. It is evident, the authors conclude, that "amebiasis occurs with sufficient frequency in infants and children to warrant its consideration as a possible cause either of acute abdominal conditions or of vague, atypical gastro-intestinal symptoms."

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EDITORIALS

Where Medicine Is Now Synonymous with Quackery

THE president of the American Medical Association, Dr. Nathan B. Van Etten, points out that medical education has lapsed below mediocrity in Germany. The medical course was cut to two years in 1939 and quacks and nature healers were legalized. Many scientists are in concentration camps.

In this democratic country we witness a demand—voiced by Dr. Van Etten—for longer medical study. The course of four years is too short and should start two years earlier than at present, so as to furnish four years of clinical work.

It is easy to see that that form of state medicine which flourishes under a totalitarian system is bound to be worse than mediocre. The low type of mind which accepts and rules such systems is certain to legalize and utilize the freak cults. They prefer them for personal and social use. It is all perfectly consistent.

Under a parallel system here, chiropractors would be commissioned in the medical



corps of the army. Such a thought, though horrid, enables us to measure today's medicine in Germany—once headquarters for advanced education.

Tuberculosis in Literature

IT is curious to note how frequently tuberculous characters appear in notable dramas and novels. Without undue mental effort we can recall "Camille," "Beyond the Horizon," "The Straw," "The Barretts of Wimpole Street," "Gabrielle," "Tristan," "The Magic Mountain," and "The Heart is a Lonely Hunter." Certain authors' insight and understanding permit them to take account of the unique psychologic switchboard of intellectually distinguished characters who are tuberculous, with the subtler and more complex reaches of the emotions operating with peculiar force and effecting significant results.

When a gifted author is himself tuberculous, as in the case of Eugene O'Neill, insight and understanding sometimes attain a clairvoyant quality.

If we are in for epidemic upsurges of apparently conquered infectious diseases, including tuberculosis, as the forebodings of certain of our authorities on immunity seem to imply, then we can expect the results to make themselves manifest in the field of literature as elsewhere. Greater Eugene O'Neills and Thomas Manns may yet appear.

Possible Future Role of Euthanasia

ACCORDING to *The Problems of a Changing Population: Report of the Committee on Population Problems to the National Resources Committee*, 44 per cent of the population of the United States is under 20 years of age; the corresponding figure for 1935 was 37 per cent. In 1980, assuming medium fertility, medium mortality, and a net immigration of 100,000 per year after 1940, only 25 per cent of the population will be under 20 years of age.

On the other hand, the proportion of those over 65 years rose from 4 per cent in 1900 to 6 per cent in 1935 and may be expected to rise to about 15 per cent in 1980.

It will be evident from the foregoing statistics that a larger and larger proportion of the income of the income-producing group will have to be devoted to the social security of the aged group.

The younger producing people of the Republic, and their leaders and representatives, if they continue to be motivated by altruistic, ethical and religious considerations, will regard such maintenance of the aged as an honorable obligation.

But we have in our midst today the euthanasia adherents. At present they profess to be actuated only by consideration of human suffering. But their allegedly humanitarian instrument may easily be invoked to "take care of" the aged who will one day be with us in excess.

Since euthanasia rests in reality upon expediency and materialistic considerations it may well be made mandatory some day and expanded in application, since the

aged will never be available as maneuverers of dive bombers, much less as builders of them. And such considerations, we fear, may finally determine social procedure in the modern state.

Is War Dysgenic?

A WRITER in the *Eugenics Review* (London) expresses the view that war is "nature's usual way of solving the problem of which body of organisms is best fitted to survive within a certain set of circumstances" and that war may therefore be equated with natural selection. War, from this point of view, is an expedient which ensures the survival of "the nation possessing the best brains and the best bodies" and one which can not properly be described as dysgenic.

The editor of the *Eugenics Review* thinks that the analogy between war and natural selection breaks down when closely examined.

"The survival of the fittest does not mean the survival of the best; it means the survival of those who are best adapted to the conditions of their environment. When man and pathogenic bacteria occupy the same ecological system, the death of the former and the survival of the latter is indubitably an instance of the survival of the fittest; but only on the most gloomy view of human nature could it be regarded as satisfactory proof of the survival of the best. Biologically speaking, the term fittest is meaningless except in relation to some particular environment, natural or social. In a world which regards war as desirable and its frequent occurrence as inevitable, the more aggressive and insensitive types have the best chances of ultimate survival. They are able to devote themselves to the congenial tasks of perfecting the weapons of destruction, while their more imaginative and gentler neighbors engage in the suicidal occupation of adding to the amenities and fullness of life. But though, unhappily, all this must be conceded it is not less true that the creation of a world in which love and virtue have a greater survival value than hatred and brutality is still within our power."

Cause of Menstruation

UTERINE BLEEDING AND LABOR

A New Theory—Preliminary Report

KARL JOHN KARNAKY, B.A., M.D.

Houston, Texas

IN previous articles, (1), (2), (3), formulating a new theory of menstruation and uterine bleeding, I presented some of the research to show that at a certain estrogenic hormonal blood level, regression of the endometrium occurs; that the coiling of the spiral arteries is increased; that stasis occurs; that there is a constriction and dilatation of the spiral arteries of the endometrium with subsequent sloughing of the endometrium and uterine bleeding; that these factors determine uterine bleeding because uterine bleeding could be produced or stopped at will by giving estrogens into the anterior lip of the cervix and by mouth.

At that time (3) I had sufficient data to show that the vascular phenomenon of menstruation is apparently due to a physiological change in the iso-ionic balance of the sodium - potassium-calcium-magnesium ions in the endometrial stroma and spiral arteries or the iso-ionic changes are the cause of the regression of the endometrium with subsequent uterine bleeding. This ionic change may be caused by autonomic nerve stimulation or inhibition or by the estrogens acting directly on the endome-

trium with resulting ionic changes.

Iso-Ionic Balance in Endometrium

WE are all familiar with the fact that sodium and calcium ions have to do with retention of water and also that potassium and magnesium ions have to do with the elimination of water. Also when we lose fluids, we lose minerals.

In inflammation there is a loss of potassium from the cytoplasm which upsets the iso-ionic balance of the sodium-potassium-calcium content of the fluid, especially the ratio of calcium to potassium. When cells are injured or inflammation sets in, the potassium increases and can in some cases reach a high level, so why could not an opposite shift in the endometrium occur at menstruation with a resulting regression of the endometrium and subsequent menstruation?

It is also known that chlorides move to and from the cell in response to alterations of the pH of the blood. This pH shift is seldom over 0.3 degree.

By determining blood sodium chloride before and during the menstrual cycle, it was observed that the sodium chloride increased until just before the uterine bleeding, at which time there was a decrease in

From the Menstrual Disorder Clinic, Jefferson Davis Hospital, Houston, Texas.

blood sodium chloride and an increase in urine sodium chloride. This has been shown to be true by various authors. Also it has been shown that there is a marked increase in calcium and water in the menstrual discharge. We can see that the loss of sodium from the extracellular spaces through the kidneys and the loss of calcium by passing into the uterine cavity and out with the menstrual discharge will cause dehydration of the endometrium. We must not forget that the endometrium is a highly specialized tissue.

IT is believed by S. Zondek that by stimulation of the sympathetic nerve there is induced a change in the cations, namely, a change in the calcium and potassium ionic balance, in favor of the calcium ions, so it appears that stimulation of the parasympathetic nerve would lead to an opposite effect, namely, a change in the calcium and potassium ionic balance in favor of the potassium ions with resulting loss of fluid from the endometrium and uterus. Aub advanced the theory that sympathetic stimulation causes increased tissue permeability and a fall in calcium balance which would also produce dehydration.

It has been shown that there is a decrease of calcium and an increase in potassium in the uterus at term, so this potassium change also causes dehydration or loss of fluid in the uterus and endometrium at term and before and during menstruation and in abnormal uterine bleeding. It is also known that potassium plays an important role in the transmission of nerve impulses. Potassium is apparently concerned in the functional activity of both the voluntary and autonomic nervous systems; especially with acetylcholine, which is important to the parasympathetic nerve. It may be that in postpartum uterine atony we will inject potassium and other ions locally, because in my experimental cases the local injection of K and other ions into the anterior lip of the cervix produced very good uterine contractions.

It is also known that progesterone is capable of causing sodium retention similarly to adrenal cortical hormones.

IT is believed by the author (1), (2) that the estrogenic blood level is the same whether a woman menstruates, or has abnormal uterine bleeding, or is in labor. It is also known that changes in the placental pH is the controlling factor of vasodilatation and constriction of the arteries. An alkaline pH causes vasodilatation while an acid pH causes vasoconstriction. This same factor may play a part in the constriction of the spiral arteries of the endometrium because uterine bleeding was produced by changing the pH slightly toward the acid side and NaHCO_3 caused normal and abnormal uterine bleeding to stop or to be checked for 12 to 18 hours.

It also seems that the pars tuberalis secretes the posterior pituitary lobe hormone and this secretion acts in conjunction with the supra-optic nucleus in controlling water metabolism. The tuber cinereum also has something to do with water metabolism. Also posterior pituitary causes an excretion of a high concentration of chloride.

Also it is well known that estrogens cause a retention of calcium and sodium ions with resulting edema. Also if edema is produced in the sex skin of a monkey by giving estrogens, this edema can be made to persist by the giving of pitressin even after the estrogens are no longer being administered, so pitressin apparently aids in keeping the ions within the endometrium which cause regression; so pituitrin may have something to do with the loss of sodium ions at menstruation.

Uterine Experiments on Ions

UTERINE bleeding was produced in two normal women by decreasing the pH of the blood (increasing the pH toward the acid side) and by giving ammonium chloride into the anterior lip of the cervix and by mouth, 14 to 21 days after the first day of the last menstruation. Also 16 cases of functional uterine bleeding were made to stop bleeding by injecting 5 to 10 cc. of saturated solution of NaHCO_3 into the anterior lip of the cervix. The bleeding stopped in 5 to 10 minutes. Three normal menstruating women were checked in their menstrual flow

for 12, to 15 to 18 hours respectively by injecting 10 cc. of saturated solution of NaHCO_3 into the anterior lip of the cervix. Three normally menstruating women were made to have an excessive flow during their menstruation by giving 10 cc. of 2 per cent HCl into the anterior lip of the cervix. As controls olive oil and sterile distilled water of pH 7.0, without any acid or alkaline drug, failed to produce any changes in the uterus. In three cases there was a slight slough produced at the site of injection, but this was of no serious consequence.

Sodium bicarbonate (40 gms. per day) and ammonium chloride (5 gms. per day) were given as long as they could be tolerated. It is my impression then one could initiate labor by injecting acid solutions into the anterior lip of the cervix or uterus.

The injection of 2-5 per cent gentian violet before hysterectomies showed that the NaHCO_3 is picked up and carried by the veins, lymphatics and arteries to the myometrium, under the peritoneal covering of the uterus, and especially to the endometrium, in pregnant women, but not so readily in non-pregnant women. The gentian violet also spreads by diffusion, so we can assume that drugs which are injected into the anterior lip of the cervix are diffused throughout the uterus and endometrium.

THE change in the pH in the uterus, endometrial stroma and spiral arteries toward the acid side when ammonium chloride is being given is apparently due to the loss of the sodium ions and possibly other ions and water with subsequent menstruation or uterine bleeding. The injection of NaHCO_3 causes a restoration of sodium ions or a pH more toward the alkaline side with resulting dilatation of the spiral arteries and the return of water to the endometrium with subsequent stopping of the uterine bleeding.

It has been observed by the author and others that "free estrogens" are excreted during menstruation, abnormal uterine bleeding, labor, and incomplete abortion. The changes in the ionic balance of so-

dium-potassium-calcium-magnesium may be the cause of the presence of "free estrogens" in the urine; "free estrogens" may be due to the ionic shift of the pH toward the acid side. The estrogens are excreted as esters when the pH is shifted toward the acid side. We are all fully aware of the very definite acid-base balance of the blood, so the actual pH change is very slight, say 0.1 or 0.3 degree. The pH change is so slight that even an electro-metric pH instrument, such as Beckman's, can hardly detect it because of the definite acid-base balance.

Discussion and Conclusions

THE author wishes to add his personal impressions as to how uterine bleeding and labor may occur. These may stimulate others to study these phases of gynecology and obstetrics. One can see that there are many factors in the production of menstruation, such as nervous, physical and chemical, as well as the interaction of the various endocrine secretions. The real scientific proofs are still being worked out in our laboratories and definite causes are still being kept a secret by nature.

THEREFORE the author concludes that menstruation or uterine bleeding or even delivery or abortion occur in the following ways:

1. When a certain estrogenic hormonal level is reached, the hormones from the pars tuberalis, acting in conjunction with the supra-optic nucleus and the tuber cinereum, cause a change in the calcium-sodium-potassium-magnesium ions directly or indirectly so that there is a change in the pH of the endometrium with a resulting regression of the endometrium, constriction of the spiral arteries with subsequent necrosis and desquamation and resulting menstruation or uterine bleeding; or if a woman is pregnant resulting in the production of labor because of the increased sensitivity of the uterus to posterior pituitary hormone or an increase in oxytocic substances in the blood. Yet a slowing of the blood stream, with resulting oxygen want which occurs in uterine bleed-

ing, may be the cause for contraction of the spiral arteries; again we must not forget that the endometrium is a highly specialized tissue.

2. Or at a certain estrogenic blood level the posterior pituitary hormone causes a shift in the calcium-potassium-magnesium-sodium ions with resulting regression of the endometrium, localized or generalized, and constriction of the spiral arteries by stimulation or inhibition of the parasympathetic and sympathetic nerves supplying the spiral arteries and endometrial stroma, with subsequent menstruation or uterine bleeding.

There are physicochemical or hormonal-electrolytic changes in the endometrium, in the spiral arteries and veins and in the stroma and extracellular spaces of the endometrium (the iso-ionic balance of the sodium-potassium-calcium-magnesium content of the blood and tissues) in normal and abnormal menstruation and labor. The acid-base balance is apparently important in functional uterine bleeding, normal menstruation, and in labor because calcium in such circumstances is more available and active in a relative alkali deficit or a shift of pH toward the acid side.

IT now appears to the author that after the anterior pituitary gland stimulates the ovaries, the estrogenic hormones cause proliferation of the endometrium with its spiral arteries which are acted upon at a certain estrogenic blood level by the hormones from the posterior lobe of the pituitary gland, tuber cinereum, and pars tuberalis in conjunction with the supra-optic nucleus. The hormones from the posterior lobe and associated nuclei act on the spiral arteries and endometrial stroma, thus causing regression of the endometrium through ionic changes and constriction of the spiral arteries with consequent menstruation, abnormal uterine bleeding, or labor. The hormones may, through affecting iso-ionic balance, cause uterine irritability and contractility, because we get strong uterine contractions at menstruation and even stronger contractions at term. The ions in the uterine musculature could play a very important part in menstua-

tion, labor, and abnormal uterine bleeding. The posterior pituitary apparently regulates the water metabolism in the endometrium and uterus and controls contractions of the uterus at term, also regulating the constriction and dilatation of the spiral arteries.

Therefore menstruation or abnormal uterine bleeding is apparently an anterior pituitary - ovarian - endometrial - posterior pituitary mechanism, because I have observed that there is some proliferation of the endometrium and the presence of spiral arteries in almost all cases of uterine bleeding produced experimentally by me or in the endometrium removed during the first 18 hours of the bleeding phases in cases coming to the Menstrual Disorder Clinic, Jefferson Davis Hospital, Houston, Texas.

IT may be that the anterior pituitary gland secretes a diuretic hormone which acts upon the endometrium because when the posterior pituitary gland is removed, we have polyuria or diabetes insipidus. So uterine bleeding may still be under the influence of the anterior pituitary during the actual bleeding phase or there may be a definite balance between anterior and posterior pituitary glands because one can inhibit menstruation or uterine bleeding by giving large doses of estrogens (1), (2).

Also the autonomic nervous system may play a part in uterine bleeding because we are all familiar with cases of amenorrhea due to fear of pregnancy, et cetera. Also we may have uterine bleeding following presacral sympathectomy. Yet 14 cases of presacral sympathectomies done and followed by me for more than two years have all menstruated fairly regularly. There may be a certain estrogenic blood level at which the posterior pituitary secretion stimulates the sympathetic and parasympathetic nerves to the spiral arteries, so causing the latter's constriction. Degenerative products in the endometrium may cause dilatation of spiral arteries. Yet the whole process is apparently only due to the estrogens' blood level and to the fact that as the estrogens increase, calcium and sodium increase and potassium and magnesium decrease. Then

when the estrogens decrease, the sodium and calcium decrease and potassium and magnesium increase. When the ratio of potassium-calcium-sodium-magnesium and possibly phosphorus is ionic, labor or uterine bleeding begins. Then this ionic shift begins all over again and the patient stops bleeding or stops having severe labor pains.

It is the belief of the author that we will, in the future, be treating menstrual disorder cases with some simple inorganic drug instead of an expensive hormone or hormones. These simple drugs will inhibit the loss of sodium and calcium ions or change the pH of the endometrium or regulate the iso-ionic balance of sodium-potassium-calcium-magnesium which will check or stop the uterine bleeding. While

the patient's uterine bleeding is being controlled, her general physical condition can be built up by rest, vitamins, et cetera. The purpose of this paper is to stimulate others to study this important phase of gynecology and obstetrics. The author's impressions and ideas may help others to carry these studies further along this line.

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THE COMPLICATIONS OF

Peptic Ulcer

Report of a Series of Cases

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THIS report comprises a relatively small number of cases covering a two year period at the Long Island College Hospital. We thought that a study of these cases would be interesting because it reflects actual experiences and the lessons learned could be applied to a larger group of cases.

In the years 1938 and 1939 there were admitted to the Long Island College Hospital 130 cases of peptic ulcer. Only 15 cases occurred in females. Because they required hospital admission these cases were usually severe cases and a large number of them had complications. Seventy-

five cases, or almost 60 per cent, presented some complication of peptic ulcer.

Total number of ulcer cases in 1938 and 1939

Duodenal	— 93 (71%)
Gastric	— 37 (29%)

130

Complications

Hemorrhage	— 31
Perforation	— 17
Acute	— 17
Chronic	— 10
Stenosis	— 17

75

Kruse (1) lists the common complications of peptic ulcer in a group of 575 cases of peptic ulcer as hemorrhage 28 per cent, obstruction 51 per cent, acute perforation 4

From the Gastro-Enterological Service of the Long Island College Hospital, Brooklyn, New York.

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per cent, and subacute and chronic perforation 16 per cent.

Gastric Hemorrhage

HEMORRHAGE occurred in 31 cases. From subsequent study the bleeding was from the duodenum in 21 cases, from the stomach in 3 cases, and in seven cases the site of the bleeding was unknown. The youngest patient was 18 years of age and the oldest was 82 years. The average age for the group was 45 years. There were three female patients. Only one patient was a Negro. Twenty-four of the patients gave a history of previous ulcer and 14 patients had a history of gastric hemorrhage. Six cases had had previous hemorrhages on several occasions. Most of the patients had had bleeding either as hematemesis or tarry stools shortly before admission. A few had these symptoms for about three days and several cases had tarry stools for as long as two weeks prior to admission. Twelve patients showed signs of severe hemorrhage and were acutely ill on admission. Only two cases in the group had mild hemorrhage. It was interesting to note that about 33 per cent of these cases had a respiratory infection about two weeks prior to the occasion of the hemorrhage. Focal infection in teeth and tonsils was present in 12 cases; in the teeth alone 10 cases; in the tonsils alone three cases. Three cases did not have any demonstrable focal infections.

The average hemoglobin was 54 per cent and the red blood cell count 2,700,000. The lowest hemoglobin was 30 per cent and the red blood cell count 1,920,000. In 22 cases the color index was one or slightly over one denoting an acute hemorrhage. In six cases with a low color index the bleeding had been present from three days to two weeks. In a general way the average gain was 20 per cent in hemoglobin and 2,000,000 in the red blood cell count in a period of one month in those cases whose color index was one or over one. The addition of hematinics or of transfusions did not materially alter the response in this group. The cases with a low color index were slower in respond-

Table I

Routine in Gastric Hemorrhage Cases

- 1.) Keep the patient warm by applying heat and quiet by ordering sufficient morphine to prevent thirst. Also reassure the patient and explain method of procedure to be followed and the reasons for each order.
- 2.) Order Gastric Hemorrhage Diet (q.v.)
- 3.) Type blood of patient, get donors for transfusion and match their bloods, so as to be in readiness for transfusion, if indicated.
- 4.) Blood transfusion is not to be given until after first week unless especially indicated by extreme air hunger or very weak, thready pulse. In such a case, not over 200 or 250 c.c. are to be given. After 10 days 500 c.c. may be safely injected.
- 5.) Blood pressure to be charted at 4 hour intervals.
- 6.) Blood Count (R.B.C. and hemoglobin) every 2 days.
- 7.) Blood coagulation time and bleeding time, study of clot retraction and platelet count to be done every 2 or 3 days, especially if abnormal, and before and after transfusion.
- 8.) If coagulability of blood is shown to be low, given intramuscular injection of human blood (10 to 20 c.c.) or order hypodermic or intravenous dose of some systemic coagulant (horse serum, coagulose, thromboplastin, hemoplastin) and repeat at least once, being careful to avoid anaphylaxis.
- 9.) Make no special efforts at moving bowels for 3 days. On 4th night order warm oil enema (5 oz.) to be retained, with small S.S. enema next day, if necessary. Continue oil enema each night, if necessary.
- 10.) Test stools daily for occult blood until this disappears.
- 11.) Make vitamin tests—if low, continue till normal after treatment.
- 12.) In persistent bleeding, x-ray treatment over spleen may be tried.

To Be Avoided

- 1.) Instrumentation or too exhaustive examinations, or x-ray study, for a period of at least 2 weeks.
- 2.) Ice or any other food or medication by mouth except as indicated in Gastric Hemorrhage Diet.
- 3.) Sudden increasing of the blood volume, by rectal, hypodermic or intravenous injections, except as noted under "Blood Transfusion."
- 4.) Raising blood pressure by the use of adrenalin, ergot or heart stimulants except in severe shock, when stimulants might be given coincidentally with transfusion.
- 5.) Lowering patient's body temperature and increasing shock by use of ice bags. Keep patient warm instead.

ing. The average gain in hemoglobin was 15 per cent and in the red blood cell count 1,500,000 in one month. These patients needed iron and at times transfusions. The blood chemistry was determined in 28 cases and in 21 cases there was an elevation of the blood urea av-

eraging 50 mg. Two cases had a blood urea over 100 mg. In about five days the blood urea returned to normal. The elevation of blood urea was not related to the age of the patient but was due to the absorption from the blood in the gastro-intestinal tract. Dr. Ingegno (2) in a review of gastric hemorrhage cases at the Long Island College Hospital in 1933 showed that a continued elevation of urea nitrogen was present in cases with persistent hemorrhage. The gastric analysis showed nothing unusual and the results conformed with those of the uncomplicated ulcer cases. Only a few vitamin C determinations were done and these were usually at the lower range of normal, 0.5 mg. to 0.7 mg. Only three prothrombin time studies were undertaken and these were normal. Further investigation along these lines should be carried out.

These patients were all treated by the routine described by Dr. Andresen (3) in 1916. The basic principle is that these patients are fed immediately and repeatedly. Transfusions, intravenous fluids and parenteral fluids are not given as a routine. In *Table I* the routine in gastric hemorrhage cases is outlined. In *Table II* is outlined the gastric hemorrhage diet, and in *Table III* the ulcer diet. The mortality rate in the group of gastric hemorrhage cases from 1925 to 1937 inclusive treated by this method was 2.3 per cent (4).

THREE cases had a complicating pyloric stenosis and one of these died. This was the only death in the group. This case had a long ulcer history. Several months before a gastro-intestinal x-ray series showed the presence of pyloric stenosis and a duodenal ulcer. The patient vomited a large amount of blood shortly before admission. In the hospital the problem seemed to be that of continued hemorrhage with a falling blood pressure, rising pulse rate, and the development of shock. However, he did not vomit blood and did not have any stools. A stomach tube was introduced and only a small amount of bile-stained

gastric contents was obtained. At autopsy a moderately dilated stomach was found and a prepyloric ulcer of the crater type was seen. However, the blood vessels in the floor of this ulcer were completely thrombosed and there was no evidence of blood anywhere in the gastro-intestinal tract. It was felt that the patient's chemical state following the pyloric obstruction contributed to his death. We have seen cases of pyloric stenosis with gastric hemorrhage where the presence of the stenosis and the resultant alkalosis mimicked the picture of persistent hemorrhage. In these cases the intravenous administration of adequate amounts of saline and glucose (2000 c.c. of saline with 10 per cent glucose) by drip method will produce a remarkable improvement in the clinical picture. In the presence of pyloric stenosis of a severe type it may be necessary to reduce the amount and frequency of the feedings. There was another death in this group but it occurred from a Type III pneumococcus pneumonia 48 hours following a tonsillectomy performed six weeks after the gastric hemorrhage. Recurrent massive hemorrhage occurred in seven cases. In one of these cases papilledema and severe headache occurred. Because a thready pulse and beginning air hunger developed, a small transfusion of 200 c.c. of whole blood was given. This was repeated in 24 hours and the patient made an uneventful recovery. The other six cases of recurrent hemorrhage subsided on the further use of morphine sulfate and continuation of the feedings. Some of the patients prefer the water-gelatin mixture to the milk-gelatin mixture.

WHENEVER a patient develops nausea on the milk-gelatin mixture or has an allergy to milk, we advise the use of the water-gelatin mixture. The milk-gelatin mixture can also be adapted to a diabetic regimen in the rare cases of peptic ulcer with hemorrhage complicating diabetes. The average hospital stay for gastric hemorrhage cases was 27 days. Focal infections were removed during this time. The dental foci were eliminated first, usually at one sitting in order to

prevent recurrent periods of absorption from repeated extractions. It is felt that the removal of focal infections tends to minimize the incidence of recurrence of peptic ulcer. Gastro-intestinal x-ray studies were undertaken on 27 cases. An ulcer crater was demonstrated in 17 cases. Six cases showed only deformity of the duodenal cap. Four cases failed to show any abnormal findings on x-ray study. When this occurs it is believed that the ulcer has healed. It is also claimed that at times the resolving blood clot still fills the ulcer crater two to three weeks after the hemorrhage and an x-ray study in two months will show the ulcer crater when the blood clot has completely resolved. In those cases which present negative x-ray findings in the stomach and duodenum after a hemorrhage, it will be advisable to do an x-ray study of the esophagus to rule out esophageal varices. Sometimes it may be necessary in these cases with negative x-ray findings to do a gastroscopic examination to rule out the presence of a hemorrhagic gastritis.

Pyloric Stenosis

THERE were 17 cases of pyloric stenosis. Eight cases were due to duodenal ulcer, seven to ulcer at the pylorus and two cases were associated with gastric ulcer. The obstruction can be due either to actual inflammatory edema at the pylorus or to the scar resulting from the healing of an ulcer. The youngest patient was 31 years of age and the oldest was 61 years of age. There were five females in the group. All gave a history of ulcer varying from two years to 35 years and averaging five years for all patients. Two cases had had a previous perforation of a peptic ulcer. Two cases had a gastric hemorrhage on admission and another case gave a history of tarry stools three years previously. The chief complaint was vomiting and pain. The vomiting was of the retentive type except in one case that vomited after each meal. The pain was usually of the ulcer type but was not relieved by food. Sometimes the pain was cramp-like and was located in the umbilical region. Two patients had the vom-

iting without the pain and were examples of a decompensation of the stomach against the obstruction produced by a scar of a healed ulcer at the pylorus. On physical examination a gastric type of peristalsis was noted in three cases. Tetany was present in one patient who had alkalosis and a normal blood calcium. It was felt that the alkalosis made the calcium unavailable for its usual metabolic functions. The intravenous administration of saline solution in this case caused a remarkable improvement in the tetany. Blood chemistry studies showed alkalosis in eight cases, the highest reading being 86 volumes per cent CO_2 and the average reading 68 volumes per cent. There was an associated elevation of urea, highest reading 96 mg., and a lowering of the blood chlorides, lowest reading 439 mg. The gastric analyses all showed high reflex acid curves with a great deal of free hydrochloric acid. Retention of the overnight meal of rice and raisins was present in five cases. We have not been able to depend on the presence of hydrochloric acid in differentiating the pyloric obstruction due to carcinoma, where we often have found hydrochloric acid lacking, from the pyloric obstruction due to ulcer. Carcinoma of the stomach can be present with free hydrochloric acid even in the presence of pyloric obstruction. On gastro-intestinal x-ray there was noted a large stomach with a smooth pyloric narrowing. In carcinoma of the stomach the pyloric obstruction presents an irregular narrowing, as a rule, due to the infiltrative type of lesion. Retention of the barium sulfate meal was noted at six hours and at times even at 24 and 48 hours. One case in a patient of 61 years of age presented an interesting x-ray problem. This patient had a long ulcer history and for six weeks prior to admission there was a typical story of pyloric obstruction. Gastro-intestinal x-rays on admission were normal. The patient persisted in vomiting and developed a mild alkalosis. After six weeks of this and when all medical procedures failed to yield a diagnosis, the gastro-intestinal x-rays were repeated. This time the typical findings of pyloric ob-

structions were present, a gastro-enterostomy was performed and the patient made an uneventful recovery.

These patients were treated by the method described in Table IV which Dr. Andresen has used on his service for many years.

ONE case was mild and rapidly progressed to the ulcer diet, which he continued at home. A second case, a male of 49 years of age, with a long ulcer history, presented a large lesser curvature ulcer and pyloric narrowing due to a scar of preivicus ulcer. There was also extensive prepyloric deformity due to scarring which had been noted as far back as 12 years ago when a laparotomy had been necessary for a perforated gastric ulcer. The patient had suffered a coronary thrombosis three months prior to his present hospital admission. Both the extensive scarring of the stomach preventing a proper gastro-enterostomy and the presence of coronary artery disease precluded operative procedure. This patient has done well with the stenosis diet and pureed foods in the past two years even though he still has a 25 per cent gastric retention at 48 hours by a recent x-ray. The other cases responded fairly well to the stenosis

diet but when they progressed to the more solid foods in the ulcer diet there was a recurrence in some degree of their former symptoms and they were subjected to operation. Four cases had a very tight stenosis and were almost completely obstructed. These patients received about 3,000 c.c. of 10 per cent glucose in saline intravenously per day and parenteral vitamin B and vitamin C. Small amounts of the stenosis feedings, about two ounces, were given every two hours from early morning till night. At 10 p.m., two hours after the last feeding, a Rehfuß type of gastric tube was passed and the total gastric contents removed. The amount of retention was noted. Usually in three to four days the amount of retention diminished and the size of the feedings was increased. In a two weeks period a great reduction in the size of the obstructed stomach was noted by x-ray. Usually at the end of four weeks the stomach was reduced enough in size to allow a satisfactory operative procedure. Transfusions preoperatively and postoperatively were usually resorted to. Fifteen cases were operated. Fourteen were simple gastro-enterostomies and in one case a palliative resection, the Devine operation, was done. All patients recovered. The

Table II

Gastric Hemorrhage and Gastro-Enterostomy Diets

For patients immediately after hematemesis or beginning 4 hours after operation on the stomach.

Note: One or two feedings may be skipped while patient is asleep. No ice, water or other drinks to be given.

Lips may be moistened.

Mineral oil, $\frac{1}{2}$ oz. each night, beginning on second night. Gelatin-Milk Mixture—(See "Diet Formulae") is to be given cool, not ice cold, as follows:

1st and 2nd Days: 5 oz. every $1\frac{1}{2}$ hours
3rd, 4th and 5th Days: 6 oz. every 2 hours
6th, 7th and 8th Days: 6 oz. every 2 hours
with addition to each of 4 feedings of one of the following:

- 1 soft boiled or poached egg
- 3 ounces of cereal
- Custard, jello or ice cream

9th Day and thereafter: Ulcer Diet

Water beginning on 5th day, increasing amounts, starting with 1 ounce at a time. In patients sensitive to milk use gelatin-water mixture.

Special Diet Formulae

Note: All mixtures should be palatable. Nurse should taste them before giving to patients.

Gelatin-Milk Mixture—(See "Routine for Gastric Hemorrhage").

	Amt.	Carb.	Prot.	Fat	Calories
Gelatin	30 gm.		27		100
Glucose (Dyso)	60 gm.	60			240
Cream (20%)	100 c.c.	3	3	18	180
Milk	900 c.c.	36	27	27	550
		99	57	45	1000 Approx.

This formula to be supplied by Diet Kitchen every 12 hours, kept cool, but not in refrigerator, to prevent jelling, and served cool.

At time of feedings, flavors are to be added as follows: Chocolate Syrup 1 teaspoonful, or coffee or tea 2 teaspoonfuls, or vanilla $\frac{1}{4}$ teaspoonful.

Gelatin-Water Mixture:

	Amt.	Carb.	Prot.	Calories
Gelatin	30 gm.		27	100
Glucose	90	90		360
Juice of 2 oranges		20		80
Water	1000 c.c.			
		110 gm.	27	540

average hospital stay was two months. Focal infections were removed prior to operation in order to reduce the incidence of recurrent ulcer.

Acute Perforation

SEVENTEEN cases were complicated by acute perforation. Twelve were gastric ulcers, four were duodenal ulcers, and one was a marginal ulcer. Both the gastric and duodenal ulcers were on the anterior wall of the bowel and quite close to the pylorus. The youngest patient was 19 years old and the oldest was 63 years, with an average of 43 years for this group. All the patients were males. Nine patients had a previous ulcer history. Two of these had had previous hemorrhages. The ruptured marginal ulcer occurred in a case with previous gastro-enterostomy and was located at the right side of the gastro-enterostomy stoma. This patient suffered a gastric hemorrhage two weeks prior to the perforation. Six cases had the first episode of ulcer pain for one to four weeks prior to perforation. In two cases the perforation occurred without any previous ulcer history. All patients complained of sudden, severe abdominal pain which was most often epigastric in location. In one case which lasted 28 hours prior to hospitalization the pain shifted in several hours to the right lower quadrant of the abdomen. Vomiting occurred in five cases. Trauma appeared to be a precipitating factor in three cases. All three had a history of gastric distress. In one case the severe abdominal pain occurred just as the patient was lifting a heavy object. In the other two cases the perforation occurred within an hour after heavy work had been accomplished. Half the cases were of less than three hours duration when admitted to the hospital. Five cases were four to six hours in duration. One case was nine hours in duration and one case had pain for 28 hours prior to admission. In the majority of the patients the temperature was below 100° rectally. Six cases had a temperature range from 100° to 102°. In all the abdomen was rigid and board-like. Fifteen patients had the greatest tenderness

Table III

Ulcer Diet

Breakfast:

Milk—8 oz. with cream if desirable.
Cereal—5 oz. with milk or cream.
Egg—1 soft boiled or poached.
Bread or toast with butter, 2 slices.
Fruit juice or smooth stewed fruit (at end of meal).

Mid-Morning:

Milk—8 oz. plain or with added cream, glucose, gelatin and flavor. Always with crackers, toast, bread or cake.

Luncheon:

Milk—8 oz.
Baked or mashed potato, or plain spaghetti.
Pureed or souffled vegetable.
Eggs—1 soft boiled or poached, or cream cheese.
Bread and butter, 1 or 2 slices.
Pudding, custard, gelatin, ice cream or stewed fruit (smooth; non-residue).

Mid-Afternoon:

Same as mid-morning.

Supper:

Same as breakfast or luncheon.

Water: at least 6 or 8 glasses per day.

Also

Included

Olive oil—½ oz. three times a day before meals.
Mineral oil—½ oz. at bedtime.
Salt—ad lib.
Vitamins as indicated.

Avoid:

1. Meat or meat extracts.
2. Alcohol.
3. Fried foods.
4. Condiments or irritants.

in the epigastrium. Two patients had the most marked tenderness over the right lower quadrant and one of these was first operated on for acute appendicitis and the true state of affairs was found at operation.

No change was found in the hemoglobin and red blood count. The white blood count was below 10,000 in seven cases; between 10,000 and 20,000 in nine cases; and in the one case which was of 28 hours duration the white blood count was 30,000.

ALL the ulcers were closed by suturing. Only two cases were drained. No gastro-enterostomy was performed. Two cases died. One patient with a perforated duodenal ulcer of nine hours duration died of postoperative pneumonia. The

other case, a perforated duodenal ulcer which followed trauma, died of paralytic ileus.

X-ray studies were done preoperatively in only two cases. A flat plate of the abdomen in one case with a three hour history failed to reveal gas under the diaphragm. The other case, which was of 28 hours duration, showed free gas under the right diaphragm. It has been recognized that a period of time must elapse between perforation of an ulcer and the appearance of gas under the diaphragm. Postoperative follow up x-rays of the gastro-intestinal tract were checked in six cases only. One was reported as negative. Two cases showed a deformed duodenal cap and one a duodenal ulcer crater. One case showed a deformity of the lesser curvature in the prepyloric region and one demonstrated a deformity of the gastro-enterostomy stoma. Post-operative checkup is important because the operative procedure often produces a deformity. In the event of the recurrence of ulcer symptoms, one may be unable to determine whether the change in the x-

ray is due to a new ulcer or to the previous operative interference.

Chronic Perforation

WE believe that peptic ulcers heal spontaneously unless prevented by a penetration of the ulcer beyond its muscular and peritoneal coat and its fixation to surrounding tissue. This occurs most frequently on the posterior wall of the stomach and duodenum. The pancreas is often the seat of the fixation of the ulcer and a "walling off" process ensues. There is a persistence of symptoms and a failure to improve on dietary regimen and rest. These are the "intractable ulcers." There were ten cases of this type in which operation was required. In nine cases there was persistent ulcer pain. One case had five episodes of tarry stools with acute hemorrhage in a period of eight months. The ulcer histories varied from three to twenty years. One patient had a palliative gastric resection six months prior to his present admission. A recurrence of severe left upper quadrant pain

Table IV
Routine in Pyloric Stenosis Cases

NOTE: Before x-ray, in stenosis cases, be sure to lavage stomach so as to assure clear outline in the films.

- 1.) Determining presence of acidosis or alkalosis, by blood, urine and expired air tests, and test for blood chlorides.
- 2.) Give 10 per cent solution in saline, intravenously, as may be required. Amount of salt guided by blood findings.
- 3.) Rest in bed as much as possible to reduce caloric requirements.
- 4.) Feedings every 2 or 3 hours of the "Stenosis Mixture"—

In Pyloric Cases—begin with 4 ounces at a feeding and increase gradually to 8 ounces during a period of ten days. Raw egg to be beaten into the mixture three times daily.

Powdered gelatin, one level teaspoonful, to be added to each feeding (dissolve in a little milk first).

Juice of an orange, after a feeding, at least once or twice a day.

Vitamins to be added as indicated.

- 5.) Mineral oil $\frac{1}{2}$ ounce each night. Soap suds enema every 2 or 3 days if required.
- 6.) If stenosis appears to be relaxing, add gradually the following, in order named:
Custard, ice cream, soft cooked eggs, cereals, puddings, bread and butter, baked potato. Later ulcer diet.
- 7.) Check up x-ray within 10 days or 2 weeks.

Stenosis Mixture—	Amt.	Carb.	Prot.	Fat	Calories
Glucose (Dyno)	60 gm.	60			240
Cream (20%)	120 c.c.	4	4	24	240
Milk	880 c.c.	35	25	25	550
		99	29	49	1000 (Approx.)

This formula to be supplied by Diet Kitchen every 24 hours, kept in refrigerator, served cool (not cold) or warm.

To each feeding add one level teaspoonful of powdered gelatin previously dissolved in a little water.

At time of feedings, may be flavored same as gelatin-milk mixture and t.i.d. a raw egg (75 calories) is to be added, and once a day juice of an orange (40 cal.) is to follow it.

made re-operation necessary. At operation a perforation in the posterior suture line was found complicated by an abscess extending retroperitoneally. At a subsequent operation a subtotal resection was done and the patient died in 36 hours from vascular collapse. Another patient was operated on for persistent ulcer pain after a gastric hemorrhage. A posterior wall duodenal ulcer with a localized abscess was found. This abscess was drained and a gastro-enterostomy was performed. The patient's further course was complicated within three months by a carcinoma of the tail of the pancreas.

GASTRO-INTESTINAL x-rays showed a crater type of ulcer. Four of these were gastric in location and the remainder were duodenal. It was often necessary to do studies by the compression technique to demonstrate the crater ulcer in the duodenum. In the four patients with gastric ulcers, two had partial resections and two had simple gastro-enterostomy. Of the six patients with duodenal ulcer, two had simple gastro-enterostomy and four had palliative gastric resections with the Devine type of antral exclusion operation. There were two deaths in this group. One, described above, was due to vascular collapse 36 hours postoperatively and the other was due to pulmonary embolus on the fourth day. Simple gastro-enterostomy in the presence of crater ulcers without pyloric obstruction seems to be more apt to cause marginal recurrent ulcers. The Devine type of antral exclusion operation is a palliative resection where the pyloric end of the stomach is removed in order to eliminate some of the ulcer-bearing tissue. The crater ulcer in the duodenum, however, is left in place and the duodenum is closed off. A gastro-enterostomy accompanies the procedure. It is not often possible to resect a crater ulcer of the duodenum because of the intimate adherence to vital structures such as the region of the head of the pancreas. Extensive fibrosis is usually present in the surrounding area and a palliative type of resection is all that is feasible.

Gastric Carcinoma

WE do not believe that gastric ulcer ever becomes complicated by malignant change. A carcinomatous ulcer begins as such. Recent gastroscopic reports have shown this also. We all realize that malignant gastric ulcer can mimic benign gastric ulcer. Various types of clinical procedures have been undertaken in an attempt to differentiate malignant from benign ulcer early enough to increase the incidence of prompt radical gastric resection, which is the only means of augmenting the number of rare cases of "five-year-cures." The presence or absence of hydrochloric acid is not reliable but perhaps the method described by Holman (5) of quantitative estimation of both gastric secretion and free hydrochloric acid after stimulation of gastric juice by a measured amount of histamine may be of help. We are inclined to feel that this method is valuable but Dr. Andresen holds that in his experience none of these methods can be depended upon. The location of the ulcer in certain regions of the stomach by x-ray, such as the lesser curvature prepylorically, increases the suspicion of malignant ulcer. Other characteristics of malignant ulcer on x-ray are irregular margin of the ulcer niche, obliteration of adjacent rugae and absence of gastrospasm. On the service of Dr. Andresen we have followed his clinical rule that an ulcer crater in the stomach which persists on x-ray after serial study in a period of three to four weeks should be considered malignant and operation is indicated. Some of these ulcers at operation prove to be chronically perforated benign gastric ulcers but even these need operation and the opportunity to remove a malignant ulcer early is not missed. Primary malignant ulcer of the duodenum is so rare as to be considered a pathological curiosity.

Summary

THE complications of peptic ulcer are reviewed and the methods of treatment analyzed. In the treatment of gastric hemorrhage the basic principle is that

these patients are fed immediately and repeatedly and that transfusions and parenteral fluids are not given routinely. In pyloric stenosis the general condition of the patient is improved and the stomach allowed to diminish in size before operation is undertaken. In some patients the medical measures alone relieve the stenosis and in patients in whom operation is impossible, because of cardiovascular complications, the nutrition is properly main-

tained by a stenosis diet. In acute perforation of a peptic ulcer, operation and simple closure of the perforated ulcer is accomplished. The "intractable ulcer" is really due to a chronic perforation of this ulcer with adherence to surrounding structures. Operation in these cases is indicated. It is not believed that a gastric ulcer undergoes malignant change but that malignant ulcers begin as such.

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The Associated Physicians of Long Island

Spring Outing of the Associated Physicians of Long Island to be Held in Glen Cove, Long Island,

June 10th, 1941

THE Associated Physicians of Long Island will assemble in the Nassau Country Club, Glen Cove, Long Island, for their Spring Outing on Tuesday, June 10, 1941.

The Chairman of the Entertainment Committee, Doctor Edwin A. Griffin, has made excellent plans for the enjoyment of the Association. Golf, tennis and other sports will be available for members, as well as surprises which Doctor Griffin has not revealed. There will be a Cocktail Party from 5:30 to 6:30 P.M., and an unusually delightful dinner has been arranged for at the Nassau Country Club. It will be served promptly at 6:30 P.M. The cost is only \$3.50. Short, snappy speeches by

*Lieut. Col. William E. Lippold, U. S. A.
Commander Ralph C. Kephart, U. S. N.
Bernard (Barney) Capehart, Aviation
Expert of Collier's*

The Scientific Program is being arranged by Dr. George E. Anderson, and will be presented in the North Country Community Hospital in Glen Cove at 3:30 P.M.

The following committees for 1941 have been appointed by the President, Dr. Harold R. Merwarth:

Scientific Committee

Chairman, George E. Anderson, 451 Clinton Avenue, Brooklyn, N. Y. Vice-Chairman, John L. Sengstack, Huntington, L. I., J. Hamilton Crawford, 178 8th Avenue, Brooklyn, N. Y., S. Lloyd Fisher, 845 Ocean Avenue, Brooklyn, N. Y., Walter R. Coles, 602 2nd Street, Brooklyn, N. Y., Merrill N. Foote, 405 Clinton Avenue, Brooklyn, N. Y., Eugene Calvell, 114 Pt. Washington Blvd., Pt. Washington, L. I., Louis H. Bauer, 131 Fulton Avenue, Hempstead, L. I., Benjamin R. Allison, Hewlett, L. I., Theodore J. Curphey, 95 9th Street, Garden City, L. I., Frank S. Child, Port Jefferson, L. I., Charles J. Paddock, Amityville, L. I., Frank N. Dealy, 89-04 148th Street, Jamaica, L. I., George M. Lott, 8401 Chapin Parkway, Jamaica, L. I.

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CANCER

CANCER OF THE BREAST

THE Department of Cancer was begun in this Journal in 1932. It was and is intended to bring together, for the information and benefit of the general practitioner, the opinions of the authors of the numerous papers appearing in the periodical medical press, concerning the many problems connected with the understanding of cancer. The second publication of the Department in June, 1932, was devoted to a review of sixteen papers on cancer of the breast. Since the publication of that number, 206 other contributions have been reviewed by the editors and herewith is submitted the first of a series in an attempt to bring this subject up to date.

We are of the opinion that no system of treatment of any disease attacking man can prove satisfactory unless it is based on an understanding of the natural history of the disease. Consequently, we begin this series of papers with a discussion of the diagnostic methods and signs, the method of development, and classification of breast cancer.

1. Diagnostic Methods and Signs

A TUMOR in the breast is the outstanding symptom of cancer: Lepper and Baker (19), Greenough (9), Kunath

(17). According to Lee (18) upward and outward displacement of the nipple, beginning fixation of the nipple, retraction of the nipple, bloody discharge from the nipple, deformity of the contour of the breast, dimpling of the skin, and adhesion of the skin to the tumor, are early diagnostic signs that the tumor is cancer. In an analysis of 1,000 cases he found the following additional signs: Pain in the breast in sixty-six; enlargement of the breast without a localized tumor in twenty-six; axillary tumor in eighteen; hemorrhage from the nipple in fourteen; pain in the axilla, arm or shoulder in fourteen, backache in fourteen; erosion of the nipple in thirteen; ulceration of the breast in ten; inflammation of the breast in ten; swelling of the arm in six; skin nodules in six; pruritus of the nipple in five; supraclavicular tumor in three; and dimpling of the skin of the breast in two cases.

Harrington (10) says that the presence of a tumor to which the overlying skin is fixed is the most common clinical sign of cancer of the breast. Pain is rarely present and when described is usually called burning or sticking. However, these clinical signs are "hopelessly inadequate" for the early diagnosis of malignancy.

AND Harrington and Miller (35) say: "A definite surgical axiom that masses in the breast should arouse suspicion of carcinoma and be investigated, is now fairly well established."

Based on a study of 400 cases, Oliver and Major (26) found that a lump in the breast was the outstanding symptom in 83.0 per cent of cases. Pain was noticed in 35.0 per cent and pain with, or increased during, menstruation in 15.0 per cent of the cases. Multiple masses were observed in 15.75 per cent, "a generally lumpy breast" in 5.7 per cent, dimpling of the skin in eleven cases and retraction of the nipple in nine.

Kunath (17) in a study of 168 cases of breast cancer seen in the hospitals of the University of Iowa (Iowa City) found that in 84.4 per cent of the cases a mass in the breast was the first symptom. The tumor was situated in the upper half of the breast in sixty-one and in the lower half in twenty cases in which there were records.

In the eleven cases of intraductal carcinoma of the breast reported by Lepper and Baker (19), the patients complained of a "lump in the breast" or of discharge from the nipple. In four cases the affected breast was definitely larger than the unaffected breast. *Peau d'orange* (also called pig skin) occurred in two; in three the skin was red and shiny. The tumors were described as ill defined, indefinite, irregular, a mass of lumps, a diffuse hard area, and a "craggy" mass. The nipple was retracted in four cases.

All of the symptoms just enumerated are symptoms of advanced cancer, and the physician who can convince himself that his patient has a discrete breast tumor should not wait until other symptoms develop before being suspicious that she has cancer.

A DISCRETE tumor may be benign. We are of the opinion that such a tumor should be removed surgically and promptly and examined microscopically.

Tod and Dawson (33) point out that benign tumors, chronic infections, cystic changes, early carcinoma, acute carcinoma

simulating infection, pregnancy and lactation tumors, and fat necrosis are the lesions that give rise to diagnostic difficulty.

These authors go on to say that we cannot be sure that a benign mammary lesion *will* become carcinomatous and it is equally difficult to be certain that it *will not* become carcinomatous. Breasts in which there are cystic changes present markedly uncertain diagnostic problems. The blue domed cyst, for example, is not evidence that carcinoma may not develop in another part of the organ.

The irregularly thickened or "lumpy breast" with small multiple atrophic cysts may contain an early carcinoma. The diagnostic signs which indicate early malignant change may appear in a tumor thought or proved microscopically to be benign and also in an apparently normal breast.

The report of the pathologist cannot always be returned in a categorical manner. It is difficult many times to be sure that a tumor is or is not cancerous.

Murphey and Lehman (24) reviewed the histological slides in sixty-three cases in which an original diagnosis of cancer of the breast was made and in which there was a satisfactory follow-up. In eight of the cases (12.7 per cent) the second study of the slides caused them to change the diagnosis to benign tumor.

A—Biopsy

A GENERAL discussion of biopsy, its technique and its value in suspected cancer of various organs and tissues was published in this Journal in 1939 (22).

Tod and Dawson (33) recommend diagnostic mammectomy in women with local tumors of doubtful malignancy, except in cases of acute ("inflammatory") carcinoma and pregnancy and lactation tumors.

In 1935 Greenough (9) was of the opinion that any mass in the breast should suggest the possibility of the presence of cancer and that its nature should be determined by biopsy. He believed it wise to adhere to the classical criterion for the diagnosis of cancer: namely, that the epithelial cells should be shown to have grown through the basement membrane of the

ducts and the acini and be identified in the surrounding tissues.

In 1933 Lee (18) said that when a tumor was discovered aspiration biopsy or punch biopsy would establish the diagnosis. However, if the surgeon did not care to use either of these methods, wide local excision was preferable to cutting into the tumor. He was of the opinion that the latter method was both undesirable and dangerous.

Rowntree (32) says that the diagnosis of a tiny lump, no bigger than a pea, is sometimes impossible until it has been removed. He is of the opinion that in such a case the tumor should be completely removed, with a fairly wide margin of healthy tissue about it and that only after the removal should the tumor be cut into.

IN 1939 Chelnoky (2) published a paper under the title: "Benign Tumors of the Breast." A somewhat extensive abstract of this contribution, we think, is justified. In the six year period 1931-1936, inclusive, 2,585 patients appeared at the Skin and Cancer Unit of the New York Postgraduate Medical School and Hospital for symptoms referable to the breast. An analysis of these cases gave the following results: There were 722 (27.9 per cent) definitely benign tumors and fifty-nine (2.28 per cent) clinically benign tumors. There were 469 (18.1 per cent) definitely malignant tumors and forty-one (1.5 per cent) clinically malignant tumors. In 1,028 cases the breast disturbances were functional (39.76 per cent); in 215 cases the lesions were inflammatory (8.3 per cent); no disease was found in fifty-one patients (1.97 per cent). The definitely benign tumors, confirmed after microscopic study, were adenomata, cystadenomata, fibro-adenomata, fibromata, galactoceles, hemangiomas, lipomata, lymphangiomas, neurofibromata, and papillomata. In his conclusion the author says: "Certainty can be obtained only by microscopic examination."

In view of the statement in the text that both carcinomatous and sarcomatous degeneration may occur in fibro-adenomata, it seems to us that a strong statement

might have been made to the effect that a discrete breast tumor should be removed surgically and promptly and examined microscopically.

Bloodgood (1-a) advised that sections of borderline tumors be sent to two or more pathologists experienced in the diagnosis of breast tumors, for opinions. If such studies produce agreement concerning the benign nature of the growth, no further intervention is necessary.

IN 1933 Quick (27) said that cases to be treated with irradiation alone required biopsy, not only for guidance in therapy, but also to complete the record.

Keynes (16) always does a biopsy in cases of breast tumors unless the clinical diagnosis is "quite plain."

On reviewing the histological slides of eighty-three cases of breast cancer, Davis (4) revised the diagnosis of eight, believing the tissue to be noncancerous (9.6 per cent).

Oliver (25), as the result of a study of three breast tumors, describes the occurrence of pavement epithelium in them, and believes the presence of cells of such character in a breast tumor bears out the contention that mechanical stimuli "may aid" in the inauguration of metaplastic processes.

We conclude that biopsy is an important procedure in the management of tumors of the mammary gland and that the removal of the tumor with a good margin of uninvolved breast tissue is the method of choice. The evidence shows that it is superior to aspiration or to punch biopsy.

B—Mammography

IN 1937 Hicken (11-a) described a diagnostic method which he called mammography. He injected thorotrast (thorium dioxide) into the ducts of the mammary gland and then made stereoscopic roentgenograms. Hicken was of the opinion that the procedure facilitated accurate diagnosis. He said that the method was not attended with harmful after effects. The paper reported 314 mammograms of which but one was followed

by the formation of an abscess. In this patient the author said that a "pyogenic mastitis" was present before mammography was undertaken.

In the same year Hicken, Best, Moon, and Harris (13) published a second paper describing the appearance in a case of bilateral papilloma and a case of lipoma. They concluded that tumors of the breast can be visualized by contrast röntgenograms made by introducing radiopaque substances into the milk ducts or by inflating the breast tissues with air. That tumors arising within or communicating with the milk ducts are best visualized by introducing stabilized thorium dioxide solution into the diseased ducts. The stereoscopic mammograms locate the tumor and portray its identifying characteristics. That tumors arising in the periductal tissue or those having communication with the milk ducts can be visualized by inflating the breast with air; that a combination of the ductal injection and the insufflation of air produces the most satisfactory visualization patterns of the structure of the breast; that lipoma, fibro-adenoma, simple retention cysts, cystic degeneration of the ducts and carcinoma are some of the tumors that have been visualized preoperatively and correctly diagnosticated.

Hicken, Best and Tollman (14) published a third paper in which they claimed that mammography would enable the diagnostician to recognize the location of a papilloma by the "characteristic filling defect" and to determine the portion of the breast to be excised. They were also of the opinion that multiple tumors could be recognized. In this paper they reported the results in 375 cases.

IN 1937 Hicken, Best and Hunt (12) were of the opinion that mammography, is invaluable in determining the location, the extent and the identifying characteristics which are responsible for a spontaneous discharge from a nonlactating breast.

In 1938 Romano and McFetridge (31) reported the result of mammography in twenty-five cases of breast cancer. In twenty-three of the patients surgical treat-

ment was employed. In thirteen of these cases the mammographic diagnosis agreed with the clinical diagnosis and was later confirmed by histological study. In the other ten cases the results of mammography were either not positive or were actually incorrect. The most serious of these errors occurred in clinically evident cancer that were not interpreted as such after the injection of the opaque material. In four of the twenty-five cases the injection of iodized oil or of colloidal thorium dioxide was followed by foreign body reactions, three of which were very severe. In two of these, breast amputation would have been necessary on account of this reaction, even though it had not been planned for another reason. In an experimental study on four dogs the injection of these opaque substances resulted in more than 50.0 per cent of foreign body reactions similar to those seen in the clinical cases. Lavage of the breast after the injections failed to prevent the reaction in all of the cases nor did physiologic lavage, produced by nursing, prevent it.

THEY are of the opinion that as now employed, mammography does not contribute diagnostic aid of sufficient value to warrant the risk of the serious reaction that may follow it. Until a non-irritating agent is found that is satisfactory from the radiological viewpoint, they do not advise its use.

Reis and Mesirow (29) report four cases in which mammography was employed. They say that the chemical remains unchanged for many months and becomes the source of considerable mental discomfort to the patient. It remains radio-active and histological studies indicate that a granulomatous reaction takes place from the presence of a foreign substance with a varying degree of tissue necrosis. They consider the method an unsafe procedure.

Friedman and Slater (7), after a study of the technique of mammography as proposed by Hicken and others, conclude that infiltration of the subareolar or subcutaneous tissue of the breast is the most important clinical indication of malignancy.

In 1940 Hicken (11-b), as a result of further studies, maintained that the majority of mastectomies accomplish only the removal of the main mass of mammary tissue and that invariably some breast tissue is left behind to undergo either normal involution or pathological change. During the past three years he has made 385 studies of the duct system of breasts, using a contrast medium (skioldan) and röntgenograms (mammography). These studies showed that the ducts are distributed over the entire anterolateral aspect of the chest and in fully 95.0 percent of cases they extended into the axilla and followed the brachial plexus and the axillary vessels into the apex of the axilla. In 15.0 percent of the cases the ducts ran downward and mesially into the epigastric region and in 2.0 percent they followed the lateral wall of the chest beyond the anterior border of the latissimus dorsi muscle. In two cases they crossed the mid line but did not anastomose with the ducts from the opposite breast. In lactating breasts the injected ducts frequently came into intimate contact with the overlying skin.

Injecting the duct orifices on the nipple with a solution of methylene blue in seventeen cases showed by an escape of the solution from the cut ends of the ducts that all of the mammary tissue had not been removed. The failure to remove breast tissue usually affected the axillary extension, the subcutaneous zone, the epigastric extensions, and the sternal segment.

He recommended that in preparation for a complete mastectomy two of the duct orifices in each quadrant of the nipple be injected with a solution of methylene blue. Then if the ducts to an extension are cut during the operation, the operator will know the location of breast tissue beyond the main gland.

C—Transillumination

IN recent years, following the development of numerous electric lighted instruments, particularly the "cold light" lamp, transillumination of the breast in

cases of suspected neoplastic changes has become an important diagnostic procedure.

Cutler (3) is one of the pioneers in the application of the method. In 1933 he said that transillumination is of value in the diagnosis of traumatic fat necrosis, in the differentiation of multiple fibromata and multiple cysts, and in the diagnosis of bleeding nipple.

In the following year Eberts (5) compared the value of evidence obtained by transillumination with that obtained by biopsy. He said that in early cancer there might be no sign, apart from bleeding from the nipple, associated with a thickened duct or an area of fine nodulation, which on transillumination might show an area of opacity. On the other hand, if there were no discharge from the nipple, there might be an indefinite area of induration determinable on bimanual palpitation, which on transillumination, would show an opacity. In such lesions a positive diagnosis could only be made through biopsy.

HUGUENIN (15) also is of the opinion that transillumination is valuable in the differentiation of solid from cystic tumors. In adenofibromata the opacity is not as deep as one would expect from the size of the tumor. In cancer, on the other hand, the shadow is very dark. All cancers, however, are not of the same density, so that shadows will not always be deep. It is likely to be inconclusive in deeply situated small tumors. It should be remembered that tuberculous masses and gummata will give an opacity equal to that seen in cancer.

In 1935 Bloodgood (I-a) was of the opinion that transillumination had done more than any other new procedure to facilitate the recognition of the blue domed cyst. He was then not operating on distinctly palpable tumors larger than a twenty-five cent piece unless the result of transillumination was "dark."

Greenough (9) also expressed the opinion that a more general employment of transillumination and of "soft part" radiographic examination of the breast in profile is desirable.

D—Röntgenograms

THE study of röntgenograms in an attempt to differentiate benign from malignant growths has been advocated by Lockwood and Stewart (20); Fray and Warren (6); and Ritvo, Butler and O'Neil (30). The last mentioned authors point out that a röntgenogram will not reveal the early stages of development of cancer of the breast or the beginning of cancerous change in a benign tumor. On the other hand, a röntgenogram will outline tumor masses so that their extent may be determined. Enlarged axillary lymphnodes may be detected and, of course, metastases to the ribs.

Lockwood and Stewart (20) maintain that "röntgen examination has proved to be of great value in differentiating benign and malignant lesions."

Fray and Warren (6) discussed stereoscopic röntgenography as an aid in establishing the differential diagnosis of mastitis and carcinoma.

Gershon-Cohen and Colcher (34) are of the opinion that x-ray study of the breast will give "diagnostic accuracy better than that resulting from macroscopic inspection of sections" of the tumor. They say that early malignancy can often be determined, especially in the fat and the postclimacteric breast. They suggest periodic examination of normal breasts in women past 25 years of age, and believe that such examinations would make earlier diagnosis more likely and would also increase the effectiveness of a therapeutic campaign against breast cancer.

Somewhat along the same line of observation Gilbride (8) in 1938 suggested that the injection of a radiopaque substance into the lymphatics (he employed lympholan,) followed by a röntgenogram might prove valuable in determining the local extent of a malignant growth. He said it did not produce harmful effects. He employed the method in the case of a woman, aged 64 years, who had an inoperable carcinoma of the entire mammary gland and made röntgenograms immediately, after sixty-six days and after seventy-three days. The injected substance could be seen in the lymphatics

and obstructions in the blood vessels could be seen. The radiopaque substance had entirely disappeared in 208 days.

E—Other Diagnostic Suggestions

REES (28) has described a method for the determination of the fixation of a breast tumor to the pectoralis major muscle. He considers fixation as evidence that the growth is malignant.

While in the horizontal position the patient is asked to bring the arm on the affected side to a right angle, and with the examiner standing in the plane of the axilla on that side, to exert pressure with the arm against the examiner. This procedure actively tenses the muscle so that if the tumor is attached to the fascia it will immediately become fixed and immobile.

Miller (23) is of the opinion that no woman should be operated for cancer of the breast without having a pelvic examination to exclude the presence of metastases to the pelvic organs.

Summary

WHILE we are thoroughly aware of the impossibility of laying down hard and fast rules for the diagnosis and treatment of any disease in the human family, we think it legitimate to point out that the weight of evidence indicates that any patient with a discrete tumor of the mammary gland, without definite metastases to the axillary lymphnodes, should have the tumor removed surgically and sent to the laboratory for immediate microscopic examination, in order to determine whether a more extensive operation is imperative. There is one exception to this rule which we shall discuss later in these articles: that is, when the tumor is found in a pregnant woman.

It is, of course, desirable that the attending physician should endeavor to form an opinion as to whether the tumor is benign or malignant before it is removed. But the clinical diagnosis of breast tumors is not reliable. Some tumors that are thought to be benign will prove on histological examination to be malignant and tumors thought to be malignant will be

found to be benign. Aspiration biopsy is of value in confirming the diagnosis of advanced and inoperable cancer in which treatment with irradiation is proposed.

The weight of evidence seems to indicate that mammography is an undesirable procedure.

Transillumination may serve as an aid in the formation of an opinion concerning the malignancy of a tumor. However, if after the employment of that method the examining physician forms the opin-

ion that the tumor is benign it should not lead him to delay the removal of the growth.

The weight of evidence seems to indicate that roentgenograms do not assist materially in the clinical diagnosis of the nature of a growth, although the future publication of the results of studies of series of cases in which an attempt has been made to differentiate the benign from the malignant growths may require a change of opinion.

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Sociometry

DR. ADOLF MEYER, Psychiatrist-in-Chief of Johns Hopkins Hospital, Baltimore, has joined the Editorial Board of *SOCIOMETRY*, A Journal of Inter-Personal Relations. Dr. J. L. Moreno, Physician-in-Chief of Beacon Hill, Beacon, New York, is Chairman.

Brazilian Congress

THE First Latin American Congress for Plastic Surgery will be held in Rio de Janeiro and Sao Paulo, 6-12 July, 1941. The chairman will be Professor Antonio Prudente, 171 Rua Benjamin Constant, Sao Paulo, Brazil.

CONTEMPORARY PROGRESS

Five Year End Results in Cervical Carcinoma Treated with Radium and 800 Kilovolt Roentgen Rays

H. E. SCHMITZ

and J. F. SHEEHAN (*American Journal of Roentgenology*, 45:229, Feb. 1941) report the use of 800 kilovolt roentgen rays in the treatment of carcinoma of the cervix at the Mercy Hospital, Chicago, Ill. The use of high voltage roentgen rays (500 kv. and over) was begun in May 1933, and the voltage was increased to 800 kv., which was found to give a "satisfactory reaction." For treatment of carcinoma of the cervix, two to four fields are used, according to the size of the pelvis (anteroposterior diameter); more than two fields are rarely required. "The axis of the beams is kept at an angle of 30° from the anteroposterior axis." The usual dosage was 1000 r. a week over a period of four weeks. Biopsy specimens were obtained weekly; by the end of the fourth week only "small clumps of altered tumor cells incarcerated in an abundant stroma" were found. But these markedly degenerated tumor cells remained for weeks after treatment was completed, as shown by serial biopsies; and recurrence was noted in about 50 per cent. of cases. Hence radium has also been employed to supplement the 800 kv. roentgen therapy;



4,500 milligram-hours of radium are given in three doses of 1,500 milligram-hours at intervals of a week. Of the 44 cases of primary

cancer of the cervix treated at the hospital in 1933 and 1934, which have been followed up for five years, only 26 were treated with 800 kv. roentgen rays and radium. Of these 26 cases only 2 were of grade I, one of grade II, 9 of grade III and 14 of grade IV (fixed or metastasizing carcinoma). Twelve patients, or 46.1 per cent., have survived five years and are well. The 3 patients with grades I and II carcinoma, and 7 of the 9 patients with grade III carcinoma are living; only 2 of the 14 patients with grade IV carcinoma survive. But this percentage of five-year survivals in a series with so few grade I and II carcinomas represents a definite improvement over results obtained with other methods. A careful study of the effects of the 800 kv. roentgen rays on the skin and mucous membranes showed early reactions of erythema and dermatitis and mucositis, but no permanent damage; blood studies showed an initial leukopenia followed by a return to normal level.



COMMENT

Today cervical and body cancer should be treated by high voltage roentgen rays, followed by the local application of radium and this followed, in the operable cases, by surgery. Various technics have been tried but the above, with certain modifications, is the most popular at present. Never be in a hurry with the irradiation of cancer. 4 to 6 weeks or longer between each form of therapy is good technic. "Dosage" is most important. "Over-dosage" is more common today than "under-dosage," particularly in the hands of those less experienced; perhaps because of the "fight" that was waged by the cancer specialists several years ago against too small "dosage" in cervical and body cancer. Read this article; it will serve to make you more "cancer conscious" and that's the state of mind in which all practitioners of medicine should place themselves. Be constantly on the lookout for cancer!

H.B.M.

The Symptomatic Treatment of Functional Dysmenorrhea by Amphetamine (Benzedrine) Sulfate

Z. E. TAYLOR (*New England Journal of Medicine*, 224:197, Jan. 30, 1941) reports the use of amphetamine (benzedrine) sulfate in cases of dysmenorrhea in which there was no "underlying gynecologic disorder," or in which any glandular dysfunction or organic condition had been satisfactorily treated without relief of the pain. The menstrual pain in these cases was severe and incapacitating and was accompanied by marked fatigue and depression. Amphetamine (benzedrine) sulfate was used in these cases because of the fact

that it causes relaxation of smooth muscle and because it relieves depression and fatigue. In the intermenstrual period each patient was given three trial doses of the drug (2.5, 5.0 and 10.0 mg.) under supervision, to determine if there was any sensitivity or any untoward reaction to it. If no reaction was evident, a sufficient quantity of the drug was given for the next menstrual period; and the patient was directed to take one tablet (10 mg.) before

breakfast for two days before the expected period and including the day of the period; and to repeat the dose if the pain was not relieved. Treatment was continued for three or four days, according to "the expected duration of symptoms." Patients were not permitted to take more than 20 mg. a day or to take the second dose after 2 P.M., without the physician's permission. For alternate menstrual periods, a placebo or an analgesic (salicylates or codeine) was given without the patient's knowledge that any change in medica-

tion had been made. Four cases are reported that have been carefully followed up for six months to two years; in all these cases the drug gave relief from pain, fatigue and depression and enabled the patient to carry on her usual activities during the menstrual period. One patient had been previously treated with theelin and another by thyroid with definite general improvement but without relief of the dysmenorrhea. In 2 of these cases a daily dose of 5 to 7.5 mg. at the time of the menstrual period was sufficient to control

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the symptoms. Thirty additional patients have been treated with amphetamine sulfate for shorter periods, but 20 have been followed for four months or more. In 4 cases, menstrual pain has not occurred under treatment; in 7 cases complete relief was obtained within two hours after taking the drug; in 12 there was marked, but not complete, relief of pain and an increased sense of well-being; 5 reported some relief which was not sustained; only 2 reported no relief; in 2 cases a reaction occurred with the test dose and treatment was not carried out. There was no evidence of tolerance or habit formation with the drug; and none of the patients "expressed a desire" for the drug in intermenstrual periods.

COMMENT

Dysmenorrhea is truly a troublesome symptom. Etiology is oftentimes obscure or impossible to determine. Under such circumstances any new therapeutic agent that offers relief is worthy of trial. Your commentator has had a very limited experience with benzadrine sulfate. One case I feel sure got complete relief. In another the dysmenorrhea continued to be just as severe. Inaccurate determination of the cause probably accounted for the discrepancy in action of the drug. We have a multiplicity of perfectly good therapeutic measures for the relief of dysmenorrhea but we do not yet know how to apply the proper remedy to the particular type of dysmenorrhea under consideration. Study your patient. There are some cases that are relieved by a little psychoanalysis.

H.B.M.

Irradiation of Benign Pelvic Lesions

W. E. BROWN and his associates at the University of Michigan Medical School and Hospital (*American Journal of Obstetrics and Gynecology*, 41:295, Feb. 1941) report a follow-up study of 334 patients treated with the x-rays or radium for benign pelvic lesions in 1925 to 1937. Only 45 of these patients were under forty years of age when the radiation treatment was given. In 78 per cent of the cases (260), the chief complaint was abnormal bleeding, in some cases due to uterine fibrosis or small fibromyomas, but in most instances without "palpable changes" in the pelvic organs; 52 patients

had chronic pelvic inflammatory disease; endometriosis was present in 9 cases; and in the remainder castration was done because of "debilitating extrapelvic lesions." In all cases diagnostic curettage was done to exclude carcinoma. A study of the dosage employed in these cases indicates that from 625 to 740 r. to the ovary is necessary for permanent castration. There were no deaths following either x-ray or radium treatment; 2 patients showed a febrile reaction that was not severe. Not all these patients were permanently castrated, as uterine bleeding of a menstrual type occurred two or more months after the irradiation in some instances. Hot flushes developed in 73 per cent. of those castrated who had not had this symptom prior to radiation; but hot flushes also developed in 62 per cent. of the women who were not permanently castrated. The incidence of hot flushes is somewhat less than after surgical castration. Of the women permanently castrated, 42 per cent. reported a decrease in libido, and of those not permanently castrated, 36 per cent. reported a decrease. In the group of patients under forty years of age who were permanently castrated, only 22 per cent. noted a decrease in libido. None reported any impairment of general health, but many indicated improvement in this respect. On the basis of these results, the authors conclude that radiation "in adequate dosage" (either x-ray or radium) is an effective means of controlling benign bleeding; castration by radiation is indicated chiefly in women "approaching the menopausal age," i.e., over forty, and in this group it is to be preferred to hysterectomy, as equally effective and practically without risk. Menopausal symptoms after radiation castration do not appear to be more severe or to last longer than in the normal menopause. A dilatation and curettage should always precede treatment. Surgery, the authors have found, is preferable to radiation in the treatment of "palpable disease of the adnexa." Surgical removal of fibromyomas is indicated if the tumor exceeds the size of a two-and one-half to three months' pregnancy. The authors consider that castration is contraindicated

in younger women with abnormal bleeding; if conservative measures are not effective, hysterectomy is to be preferred to either surgical or radiation castration in order to retain the ovaries.

COMMENT

Irradiation, as employed in the treatment of benign pelvic lesions, is a most excellent therapeutic agent. However, here as elsewhere in medicine, "without a correct diagnosis there can be no intelligent treatment." One must be capable of choosing the proper case for irradiation and then of applying the proper "dose" in said case. Another way of saying it—each case must be individualized. One cannot "order radium", for example, from a commercial firm, read over the accompanying directions for applying it, and expect to obtain satisfactory results. The same "goes" for x-ray. There are certain indications and there are certain very definite contraindications for the use of radium and/or x-rays and unless these are understood dismal failure is sure to follow their use. Furthermore, the patient's life may be seriously jeopardized or even death may occur. Dangerous agents, these! Intensive study and personal experience is the only "answer" to their successful employment.

H.B.M.

Deep Cauterization of the Cervix; A Factor in Reducing the Mortality of Hysterectomy

B. Z. CASHMAN and JOHN S. FRANK (*American Journal of Obstetrics and Gynecology*, 41:379, March 1941) report that in the past six years their mortality in subtotal hysterectomy has been below 1 per cent. The cases in which this operation has been done have been unselected and have included obese and physically handicapped patients, those with inflammatory lesions, and those in whom the operation was technically difficult. In all these cases deep cauterization of the cervix has been done, after careful biopsy studies, as the first stage of the hysterectomy; the cauterization was sufficiently deep to destroy all infected mucosa and glands. In no case has it been necessary to treat the cervix subsequent to the hysterectomy for either inflammation or carcinoma. Pre-operative treatment and other factors in the technique of the operation have aided in the reduction of the mortality in these

cases, but the deep cauterization of the cervix removes one source of infection and thus an important cause of postoperative complications and deaths. Not only does this procedure prevent postoperative infection following subtotal hysterectomy, it also prevents the development of inflammatory lesions or carcinoma in the cervical stump, according to the authors' experience. Up to 1938, R. R. Huggins and the senior author (B.Z.C.) performed 2,525 subtotal hysterectomies with deep cauterization of the cervix; no case of carcinoma developing in the cervical stump is known; in a careful follow-up of 506 of these cases, no cervical stump carcinoma was found. It is the authors' opinion that subtotal hysterectomy with deep cauterization of the cervix renders total hysterectomy unnecessary for benign conditions of the uterus.

COMMENT

The question of supracervical vs. total hysterectomy is still vehemently debated in many centers. The Pittsburgh group has apparently settled this question by offering, to their satisfaction and to others who have tried it, thorough and deep cauterization of the cervix as a routine in every hysterectomy. All question of malignancy must have been previously ruled out. Paradoxical as it may seem, this offers a method of performing complete hysterectomy by leaving the cervix. This, of course, is accomplished by removing the endocervix with the adjacent gland-bearing areas, thus removing all the trouble-producing portion of the cervix and leaving merely a "shell" of cervical tissue without actually performing panhysterectomy. We have practiced this technic, with few exceptions, in hundreds of hysterectomies and see no reason to change our technic. Notwithstanding the assurances of the advocates of routine panhysterectomy that it takes no longer, that the vagina is not shortened, and that it does not become prolapsed, etc., we contend that this is not always true and that by deep cauterization of the cervix and supracervical hysterectomy we lessen the operative time, that the vagina is never shortened and can be more securely suspended and prolapse more certainly prevented, and that convalescence is a little smoother. We have not seen cancer develop in a single "shell" of cervix thus retained. We can recommend this technic for hysterectomy in benign lesions but would warn "be sure you know how to cauterize the cervix so that no endocervical or gland tissue remains behind."

H.B.M.



Renal Function in Late Toxemia of Pregnancy

A. C. CORCORAN and I. H. POOL (*American Journal of Medical Sciences*, 201:385, March 1941) report a study of renal function in patients showing the typical syndrome of the late toxemia of pregnancy. In this study renal function was measured by the renal clearance of phenol red and inulin, supplemented in some cases by the simultaneous determination of the clearance of diodrast and urea. On the basis of these tests it was found that the cases of pregnancy toxemia could be divided into three groups. In the first group (13 cases), glomerular filtration was low in proportion to the rate of renal blood flow; all of these patients showed a severe type of toxemia and developed eclampsia before delivery. In the second group, the glomerular filtrate was relatively increased; this is a functional alteration characteristic of essential hypertension, and in this group of 9 patients, 4 were known to have shown essential hypertension before pregnancy and 3 stated that other members of the family had hypertension. In the third group both the glomerular filtration and the renal blood flow were within normal limits. Patients in this group showed only mild symptoms of toxemia. In the first group, the glomerular filtration increased soon after delivery. A follow-up study showed that 3 patients in this group had developed slight arterial hypertension associated with some decrease of renal blood flow and increase of filtration fraction. Of the second group of patients, one who had hypertension for some years before the symptoms of toxemia developed continues to show hypertension; one patient shows no hypertension a year after the toxic pregnancy; another has had a second normal pregnancy without tox-

mia; 2 show slight hypertension. Very few patients in the third group have been followed up; one now shows slight hypertension, decreased renal blood flow and increased glomerular filtration. The characteristic renal lesion of the late toxemia of pregnancy is swelling of the glomerular basement membrane; this is expressed functionally by decrease in glomerular filtration; the findings in the series reported indicate that when function tests indicate definite decrease in this filtration factor, the toxemia is more severe and eclampsia is more apt to occur. If the filtration factor is increased, the toxemia may be classed as "essential hypertension, pre-existing or formerly latent."

COMMENT

Since we do not know the etiology of the toxemias of pregnancy any study seeking to clarify the etiology is worth while. Renal function in the late toxemia of pregnancy is certainly an important item—both immediate and remote. The "follow-ups" on a large number of toxemias of pregnancy from many clinics are what we need badly at present. Prognosis is very important and by these "follow-ups" we should be better able to give advice regarding future pregnancies.

H.B.M.

Objections to Induction of Labor in Normal Pregnant Women

E. L. CORNELL (*American Journal of Obstetrics and Gynecology*, 41:438, March 1941) notes that recently induction of labor in normal pregnant women at or near the calculated term has been advocated for many reasons. One of these reasons is that pregnancy is prolonged beyond term; but the author notes that the calculation of the time of delivery on the basis of the date of the last menstrual period or from the date of quickening cannot be made with absolute exactness. Induction of labor results in certain complications more frequently than normal labor; one of these complications is prolapse of the cord; another is infection of the placenta. In the author's experience, when he induced labor more frequently than at present, he found the fetal mortality to be higher in induced than in normal labors;

he also notes that it is more difficult to explain the death of the baby "to the distressed parents" when labor has been induced. He has also found puerperal morbidity rates to be higher in cases of induced labor or "in any form of interference that involves vaginal manipulation" than in spontaneous deliveries. The use of oxytocic drugs to induce labor involves a definite hazard, as these drugs may cause tetanic contractions of the uterus, with possible rupture, or laceration of the cervix or injury to the fetus. The author has made a study of 200 normal pregnant women with spontaneous labors, with special consideration of the weight of the infant and the time of delivery in relation to the expected term. It was found to be true that the babies carried more than seven days after the expected term are larger; most of these babies weighed 3000 to 4000 gm., only one weighed more than 4,500 gm. There was a wide variation in the weights of the babies in the entire series; the greatest difference was observed in the group delivered from seven days before the expected term to term; the smallest baby in this group weighed 1,814 gm. and the largest 4,400 gm. There was no fetal or maternal mortality in this series. The number of forceps deliveries was high for the entire series, because most of the patients were delivered under analgesia and were "not cooperative in the second stage of labor." The results in this series of cases the author believes indicates that there is no justification for interfering with the natural processes of pregnancy and labor in normal women."

COMMENT

There is no more reprehensible act on the part of any physician doing obstetrics than to practice "meddlesome midwifery." Your commentator can agree with the author 100 per cent in all of his objections to the induction of labor in normal pregnant women and would class such conduct of labor as "meddlesome midwifery." Enough said! except thanks to Dr. Cornell.

H.B.M.

Rheumatic Heart Disease In Pregnancy

H. GREENBERG and J. MCGLEARY (*American Journal of Obstetrics and Gynecology*, 41:44, Jan. 1941) present a review of 345 cases in which rheumatic heart disease complicated pregnancy at the Margaret Hague Hospital of Jersey City from 1933 to 1939. The treatment of heart disease in pregnancy is directed mainly toward preventing decompensation. An analysis of this series of cases shows that there are three important factors that determine the probability of decompensation: (1) The functional cardiac capacity prior to pregnancy as indicated by the degree of limitation of physical activity; (2) the age of the patient; (3) the presence or absence of previous cardiac failure. In the entire series of 345 cases, decompensation occurred in 77 or 22.3 per cent.; in 64 of these cases the functional capacity of the heart had been low and the physical activity of the patient markedly limited. The incidence of decompensation was also much higher in patients over thirty years of age (43.6 per cent.) than in younger patients (16.1 per cent.). The functional capacity of the heart and the patient's age are undoubtedly dependent on one another to some extent. Of the 44 women who had previously shown decompensation, 33 or 75 per cent. decompensated in the pregnancy under consideration. In 80 per cent. of those who developed decompensation in this pregnancy, the cardiac failure occurred in the first eight months of pregnancy. In several instances in patients who were hospitalized, definite improvement in the cardiac condition was noted in the last month of pregnancy; decompensation occurred during labor in only 5 instances. This is an indication that there should be no interruption of pregnancy in the later months in patients with cardiac disease, but that they should be allowed to go to term. Only 24 of these patients were delivered by cesarean section; in these cases both the morbidity and the mortality was higher than in those delivered vaginally. The authors are of the opinion that cardiac disease is not an indication for cesarean

section, although section may be indicated in cardiac patients on other (obstetrical) grounds. In all pregnant patients with cardiac disease, physical activity should be restricted and they should be kept under careful supervision. In patients with a severe degree of heart disease and those with a history of previous decompensation, hospitalization for the duration of pregnancy is desirable; absolute bed rest should be enforced at "the first suspicion" of any decrease in cardiac reserve in every case. In the last 103 cases of cardiac disease in pregnancy at the Hospital (not included in the 345 cases analyzed), the incidence of cardiac decompensation was reduced to 2 per cent. by these measures.

COMMENT

Heart disease has long been a common American ailment. Rheumatic heart disease in pregnancy is therefore a very important obstetrical problem. It is a dual medical problem—the heart and the pregnancy and labor. No one physician should assume all the responsibility of handling a "pregnant cardiac." If there is no consultant available we believe the general practitioner doing obstetrics is more competent to handle these cases than the surgeon or internist who does not practice obstetrics. There is a good lot of "common horse sense" involved in handling the pregnant cardiac case. The authors of this paper have "hit the nail right on the head" in their discussion of the subject. Read it—over and over. You will handle your next pregnant cardiac better.

H.B.M.

The Use of Evipal Soluble Rectally In Obstetrics

H. K. ANDERSON and G. P. BOHLENDER (*American Journal of Obstetrics and Gynecology*, 41:305, Feb. 1941) report the use of evipal soluble—the sodium salt of evipal—given by rectum as an analgesic in delivery in 53 cases. In all cases the initial dose of evipal was 1 gm. in 30 cc. tap water; repetition of the dose was necessary in only 2 cases. The evipal was given after labor had definitely begun and the patient began to complain of pain, and when the cervix showed effacement and dilatation of 3 cm. or more. If the drug is given too early, the patient may go to

sleep and labor cease entirely; this occurred in one case. In all but 3 cases 1/150 gr. scopolamine was given hypodermically at the time of the rectal administration of evipal. In only one case was delivery effected with the evipal and scopolamine alone; in most instances open drop ether was employed for the delivery. Labor was not prolonged in these patients; the average length of labor in the primiparas was fifteen and a half hours and in multiparas twelve and a half hours. Many patients were restless, but in no case did a patient become "wild" or difficult to manage, as sometimes occurs with nembutal. Good or fair analgesia was obtained in 86 per cent. of these cases, and good or fair amnesia in 76 per cent. The 3 patients who were not given scopolamine had almost complete analgesia but no amnesia. There was one stillbirth due to obstetrical causes and prolonged labor; the last dose of evipal in this case was given forty hours before delivery. No ill effect on the child was noted in any case; there was no asphyxia; the cry was somewhat delayed in 3 infants but they responded promptly to artificial stimulation. There were no patients with toxemia in this series; the authors advise against the use of evipal, which is detoxified in the liver, in case of toxemia. There was no excessive uterine bleeding. The authors consider that evipal soluble is "sufficiently satisfactory" as an analgesic in obstetrics "to deserve further study in a larger series of cases."

COMMENT

Modern women demand analgesia and amnesia during labor. This being an established fact all physicians doing obstetrics must have a "method of relieving the pain of labor." Any method that is harmless to the baby and efficacious for the mother will suffice. But—the physician must know the "ins and outs" of the method he chooses to use. The better he knows the method the more successful he will be in giving his patients painless labor. We have never used "evipal soluble rectally in obstetrics" but we have no doubt but that it is a very excellent obstetric analgesic. Advice: pick out a "method"—any method that is good and safe—master its technic and "stick to it."

H.B.M.



The Importance of Chronic Sinusitis In the Treatment of Bronchial Asthma

R. CLARK GROVE (*New York State Journal of Medicine*, 41:455, March 1, 1941) reports the results of sinus surgery in 200 cases of asthma. In these cases followed up six months to six years after the operative procedures had been completed, 69.5 per cent. showed definite or marked improvement. The percentage showing improvement increased with the length of time elapsing after operation. In considering the type of operation employed, distinction is made between radical operations on all infected sinuses (complete group), and incomplete operations not sufficient to clear up infection in all the sinuses involved. In the complete group 85 per cent. showed definite or marked improvement, while in the incomplete group 54 per cent. showed improvement of similar degree. In the cases of asthma in which infection was associated with skin-sensitivity to other allergens, the results of both complete and incomplete operations were better than in cases in which infection was the only demonstrable etiological factor. In most instances both types of cases where treated with autogenous vaccines prepared from sinus membranes removed at operation; patients with skin-sensitization were also treated with injections of the allergens indicated. In a study of the pathological findings in the sinuses operated on, it was found that the mucous membrane was of the hyperplastic type in practically 100 per cent. of these cases of asthma. Polyposis occurred in approximately 30 per cent. When the sinus mucous membranes were cultured, 87 per cent. were positive for one or more organisms. When the organisms from 80 sinus membranes were compared with the organisms previously grown from the

washings of the antrums, they were found to be different in 43.7 per cent. of cases. Disease of the paranasal sinuses is evidently an important focus of infection in asthma, but surgical procedures on the sinuses cannot be expected to produce marked improvement in asthma unless other possible allergic factors are also given due consideration in treatment.

COMMENT

In a general way, the results of sinus surgery will be poorer in individuals who have allergic sensitivity than in individuals who do not. The complete eradication of infection from patients with hyperplastic pansinusitis is probably not mechanically possible. The author's efforts in that direction are praiseworthy and his results certainly support his opinions. An interesting observation is that the organisms found in diseased sinus mucous membrane were different in over forty per cent. of cases from those found in sinus washings. This, along with other factors, may explain why our results from the use of autogenous vaccines are often not good.

L.C.M.

Intranasal Operation on the Frontal Sinus

CARL STAMM (*Laryngoscope*, 51:77, Jan. 1941) considers that for the intranasal operation on the frontal sinus, Halle's approach as described in his later publications is the best and safest. The author's method of widening the frontonasal duct for drainage of the frontal sinus through this approach is described. The anterior ethmoid cells are found diseased in 90 per cent. of cases of chronic frontal sinusitis, in the author's experience, and in these cases an anterior ethmoidectomy is also done. After-treatment consists in irrigations with normal saline and local treatment with weak silver nitrate solution. This operation is indicated in cases of subacute and chronic frontal sinusitis that do not respond "in due time" to the usual conservative measures. In most of the author's cases the usual surgical office procedures had been carried out to improve drainage. The intranasal approach is contraindicated when an intracranial complication is present or is "to be feared;" and also in cases of osteomyelitis of the anterior or posterior wall. The intranasal

operation on the frontal sinus was employed in 142 cases from 1925 to 1939. In 78 per cent. of these cases all secretion from the frontal sinus ceased in four to twelve weeks; in an additional 12 per cent. the secretion persisted for a longer period, with intermissions of "complete dryness," but eventually cleared up completely. In 10 per cent of cases cure was not obtained by the intranasal operation; these patients showed some degenerative change of the sinus mucosa, or some unfavorable general systemic condition, such as allergy, tuberculosis or syphilis. In only one case was an urgent external reoperation required, because of extradural abscess and osteomyelitis of the posterior wall occurring seven years after the intranasal operation. The author considers that the intranasal operation has definite advantages over the external operation in the treatment of frontal sinusitis when surgery is indicated. It preserves the size and "character" of the frontal sinus but insures a permanent opening for drainage and ventilation; it causes no disfigurement; important structures on the nose are preserved and there is no sinking in of the newly created frontonasal duct; there is no risk of postoperative diplopia or osteomyelitis.

COMMENT

The old question as to whether intranasal or external operation on the frontal sinus is best can easily be discussed at long length. There are undoubtedly instances of sinus disease in which there is permanent mucosal infection which can not be eliminated by free ventilation and drainage. The modern technique of external operation (Likely Simpson, for instance) eliminates many of the author's objections. Dr. Stamm's technique would seem to many operators to be more difficult and more dangerous than the external procedure. We agree with him, however, that probably ninety per cent of frontal sinus disease will get well if free ventilation and drainage can be provided. The method of provision will have to remain an individual selection fitted to the individual patient and to the operator's skill and training.

L.C.M.

Decubital Ulcers of the Pharynx

R. WALDAFEL (*Archives of Otolaryngology*, 33: 251, February 1941) notes that Heryng in 1890 described a benign ulcer of the pharynx that was usually unilateral, located on the anterior pillar over the tonsil, covered by a grayish-white coating and did not bleed when touched; the rest of the pharyngeal mucous membrane is normal. The author has recently seen several cases of this type, 4 of which are reported. In the first case a tonsillectomy had been done previously, but a remainder of the tonsillar tissue, behind and under the ulcer, was enlarged by inflammation. In the second case a melanosisarcoma of the left tonsil had become larger after roentgen treatment, causing the left faucial pillar to bulge forward. In the third case there was a peritonsillar abscess. In these 3 cases the ulcer was unilateral, on the left anterior pillar in cases 1 and 2, and on the right anterior pillar in case 3. In the fourth case there was severe tonsillitis with swelling of both anterior pillars and the uvula, and sharply limited ulcers with a gray-white coating had developed on both anterior pillars and on the uvula. On the basis of his observations in these and similar cases in which the development of the ulcer was observed from its beginning, the author concludes that it is produced by the pressure of the "opposite bulgings of the tonsillar swellings and the base of the tongue" on the mucous membrane of the anterior pillar. If the uvula is swollen, an ulcer may develop on the uvula also, as in case 4. A swelling of the tonsillar area is an essential factor in the development of these ulcers, as this brings the mucous membranes of the anterior pillar and the base of the tongue into prolonged contact under pressure, thus producing a "decubitus" on the anterior pillar. The swelling may be due to different causes— inflammation of the tonsils or tonsillar remnants, peritonsillar abscess, etc. — but it is always primary, the ulcer secondary. This theory of the etiology of benign ulcer of the pharynx explains all its clinical characteristics — its appearance in certain areas, its sharp limitations corresponding

to the contacting surfaces, and the normal mucous membrane around it. The ulcers may best be designated as "decubital or contact ulcers" of the pharynx.

Treatment of Profuse Hemorrhage Following Tonsillectomy

E. I. MATIS (*Archives of Otolaryngology*, 33: 86 Jan. 1941) describes a method of controlling profuse hemorrhage after tonsillectomy by a special suture technique. He notes that control of bleeding may be extremely difficult in some cases, but the method described makes this possible when other methods have failed. The instrument and technique used permit suturing when there is "an unceasing flow of blood" and vomiting. The instrument employed is similar to a slender artery forceps with a needle at the end; to make a stitch the instrument is closed and a small lever near the handle pressed down with the forefinger; this automatically pulls the suture material through, leaving it ready to be tied. Silk or catgut can be employed. In the use of this instrument to control hemorrhage after tonsillectomy, an artery forceps is used to seize the bleeding point or area; if the bleeding is profuse, "a substantial portion" of the tissue should be grasped with this forceps, which is held in the operator's left hand, and pushed inward. The automatic suturing instrument described is then introduced with the right hand, placing the needle over the bleeding point. The instrument is closed with the lever drawing the sutures through; the instrument is then opened and removed from the patient's mouth. Then the level of the instrument is pushed up, releasing the silk or catgut, so that the suture can be completed by tying the knot, which stops the flow of blood. The whole procedure, the author notes, takes two minutes.

COMMENT

We quite agree with the use of suture ligatures to control hemorrhage from the tonsil fossae and use them routinely on all bleeding points which are not readily con-

trolled by pressure. We have had no particular difficulty in applying these suture ligatures with a curved tonsil hemostat and a small half-curved round needle. There have been several instruments devised during the past ten or twelve years for this purpose and they perhaps facilitate the application of sutures once the operator becomes familiar with their use.

L.C.M.

Chronic Tonsillitis in Secondary Syphilis

E. W. THOMAS and D. H. GOLDSTEIN (*New York State Journal of Medicine*, 41: 256, Feb. 1, 1941) report 23 cases of severe chronic tonsillitis in patients with secondary syphilis; in 20 of these cases the correct diagnosis of the throat condition had not been made when the patients were admitted to Bellevue Hospital. In these cases the chronic sore throat was the chief symptom for which the patient sought medical advice. In 15 cases the tonsillitis was of the membranous type, in 8 of the follicular type; the lesions were bilateral in all cases. By the time the diagnosis of syphilis was established, all but one of the 23 patients had a skin rash, but in the 20 cases in which diagnosis was not made prior to admission the sore throat developed from a few days to several weeks prior to the rash. The correct diagnosis of syphilitic tonsillitis is undoubtedly difficult unless the possibility of syphilis is kept in mind. None of the patients appeared as ill as in the average case of tonsillitis of equally severe degree; fever was of rare occurrence. In every case the throat lesion healed rapidly when under treatment with arsenicals, clearing up more promptly than the skin lesions. The author suggests that in every case of chronic tonsillitis a blood Wassermann test should be made, and a thorough examination for "stigmas of secondary syphilis."

COMMENT

A timely reminder that lues can appear anytime and anywhere.

L.C.M.

MEDICAL TIMES, MAY, 1941



Prostigmine Methylsulfate in the Treatment of Deafness

M. S. ERSNER, I. A. RUSH and D. MYERS (*Archives of Otolaryngology*, 33: 193, Feb. 1941) report the use of prostigmine methylsulfate in the treatment of 59 cases of chronic deafness and tinnitus; many of these patients showed diminished bone conduction with loss of hearing in the high as well as the low frequencies. The different types of deafness in this series were: conductive deafness, 10 patients; nerve deafness, 10 patients; otosclerosis, 14 patients; and mixed type, 25 patients. No cases of acute deafness and tinnitus were treated. Prostigmine acts as a stimulant to the parasympathetic nervous system; its action is fairly prompt but temporary and not cumulative; its use in deafness and tinnitus is "of necessity empiric." In the authors' series of cases prostigmine methylsulfate was given hypodermically in a 1:2000 solution, in doses of 1 cc. (0.5 mg.). In 25 cases injections were given daily; in 10 cases, three times weekly; in 14 cases, every other day with prostigmine bromide tablets (15 mg. each three a day) by mouth in addition; in 10 cases three times weekly with ammonium chloride (enteric) capsules as a supplement. The plan of treatment was varied intentionally in order to determine if possible the optimum interval between injections. In every case at least thirty-five injections were given, except in 3 cases in which treatment had to be discontinued because of the occurrence of attacks of angina pectoris. In 26 cases (44 per cent.), there was no change in the hearing or in the tinnitus during or after treatment; 4 patients stated that there was some improvement, but this could not be demonstrated by audiometer tests; and

these patients claimed the same degree of subjective improvement when injections of physiological saline were given. Eighteen patients (30.5 per cent.) also noted similar subjective improvement, not substantiated by the audiometer tests, which was only temporary although treatment was continued; in 8 patients (13.5 per cent.) there was audiometer evidence of 8 to 10 decibel improvement in hearing, but this improvement was "transitory;" in 3 cases treatment had to be discontinued, as noted above. In this series of cases, therefore, prostigmine "proved of little, if any, value" in the treatment of deafness and tinnitus.

I. W. ALEXANDER (*New Orleans Medical and Surgical Journal*, 93: 474, March 1941) maintains that prostigmine is a stimulant to the (parasympathetic) nerve plexus that supplies the mucous lining of the tympanum and auditory tube, and therefore is of value in cases with pathologic changes in this area resulting from an inflammatory process. It is not of value in otosclerosis or nerve deafness. He has treated 20 cases of acute tubotympanitis with injections of 1 cc. of a 1:2000 solution of prostigmine methylsulfate, given every other day, combined with "the usual accepted treatment;" none of these patients required more than three injections to improve the hearing and relieve tinnitus, although in a number of cases the usual treatment prior to the administration of prostigmine had not produced any improvement. Six patients with deafness resulting from "the end stage" of acute otitis media (suppurative or non-suppurative) showed normal hearing after three injections of prostigmine at forty-eight hour intervals, the usual treatment being continued during the period of prostigmine therapy. Of 44 patients with chronic otitis with or without tinnitus, 16 showed good recovery in hearing (audiometer tests), 13 stated that their hearing was better, but this was not shown by their audiograms; 5 patients with tinnitus were relieved of this symptom without improvement in hearing; 10 patients showed no improvement. In these cases an injection of 1 cc. of the 1:2000 solution of prostigmine methylsulfate was

given twice a week, combined with catheterization and massage. In 2 cases tinnitus recurred after a period of relief; under a new course of treatment, there is definite improvement. The author notes that patients with chronic catarrhal otitis media require several months of prostigmine therapy. In an additional 5 cases with tinnitus but no loss of hearing, 3 patients were completely relieved and the tinnitus markedly lessened in the other 2 cases under treatment with prostigmine given twice weekly without any other additional treatment. While all the patients in this series were treated with injections of prostigmine methylsulfate, the author notes that prostigmine may be given by mouth in the form of prostigmine bromide tablets (three a day). The author concludes that while "the scientific rationale of this treatment may be questioned," he has had better results with it than with methods previously employed in the types of deafness described.

COMMENT

We are very much inclined to believe that this will go the way of other almost forgotten methods of treatment for deafness. Meanwhile, be sure that no harm is done. Further observations will in time give us a proper evaluation of the method.

L.C.M.

The One-Stage Fenestration Operation Using the Postaural Approach

LEE KEND (*Laryngoscope*, 51: 37, Jan. 1941) describes his operation for the improvement of hearing in otosclerosis; the basic feature of every such operation, he notes, is "the construction of a permanently patent fenestrum" into the labyrinth. Various investigators have found that in healing of the otic capsule after injury, the periosteum plays the leading part in osteogenesis and repair. In order to inhibit the activity of the periosteum, following operation, the patient is put on a vitamin-D free diet that is high in calcium and low in phosphorus for two weeks before and four weeks after the operation; calcium carbonate tablets are also given, to increase the calcium intake, and ovarian extract by injection (further suppressing vitamin D

activity). Rickets can thus be "simulated" for a brief period without injury to the patient's general well-being. This operation is indicated only in patients in good general health; general anesthesia is employed. The technique used by the author includes: 1. A Blackwell modified radical mastoidectomy with modification of the flap formation so that the epitympanic recess and basal-labyrinthine portion of the mastoid cavity is covered with a viable flap. 2. Removal of the head of the malleus. 3. Fenestration of the external semicircular canal. A No. 2 dental polishing burr is used for the fenestration, and "a saddle defect" is created in the bony capsule around the fenestrum, the periosteum thus being removed "as far as possible from the healing field." The postaural approach used in this operation, the author has found, gives more adequate exposure to the surgical field than the approach used in other fenestration operations; the operation is thus facilitated and the time required shortened; the cosmetic effect is good; the convalescence is of shorter duration and "less troublesome to both the patient and the surgeon" than with other operations employed in otosclerosis.

COMMENT

Labyrinth fenestration operations are very difficult technically, the minute details being of essential importance. Of equal importance are the studies of the patient made before and after operation. Progress is being made and the author's idea of a temporary "simulated rickets" may prove to be of value.

L.C.M.

Hearing Impairment in College Students

H. NEWHART (*Journal-Lancet*, 61: 92, March 1941) notes that many students enter college with unrecognized hearing defects, and accurate hearing tests are therefore of special importance. Deficient perception for the higher frequencies in persons at the college entrance age may indicate the beginning of degenerative changes "which may insidiously extend to the lower frequencies." Such deficiencies for the higher tones may also cause minor

MEDICAL TIMES, MAY, 1941

speech defects and difficulty in learning to speak certain foreign languages. The audiometer makes it possible to detect deficiencies in hearing that cannot be diagnosed by any other method. For accuracy in making hearing tests with the audiometer, a small sound-proof room should be used to exclude "interfering noises." At the University of Minnesota audiometer tests of all students have been made for the past ten years, the technique being improved as better instruments have been developed. Any student found to have a loss of hearing of 9 decibels or more in one or both ears at the speech level, or of 25 decibels or more at frequencies above 4096 d.v., is given a careful otolaryngological examination. In the testing of 5121 newly admitted students at the University in 1939-40, the pure-tone audiometer was employed. A significant impairment of hearing, as indicated above, was found in 17 per cent of the men and 8.3 per cent of the women; most of these deficiencies concerned perception for the higher frequencies—a large percentage of which are not recognized without such tests. "The primary benefit" of such tests undoubtedly accrues to the individual student," as further loss of hearing may be prevented; but such tests also have a value "in the growing field of health education."

COMMENT

The more we learn of the problem the better we are equipped to deal with it. We may be assured in advance of the accuracy of any observations reported by this well known authority. His conclusions bear the

Gold in Arthritis

SABIN and Warren in *Science* (92, 535 (1940) #2397) announce a new gold compound, calcium aurothiomalate. This compound does not appear to possess the toxic reactions which other gold compounds have evidenced and which fact has been the main objection to their use. Seventy mice suffering from arthritis were administered intramuscularly 1 mg. or more of the chemical. Of this group 90% showed no signs of the experimental arthritis after treatment. Smaller doses of 0.5 and 0.25

support of many years of intensive study of the problem of deafness.

L.C.M.

Erysipelas as a Complication Following Mastoidectomy

H. D. HARLOWE (*Laryngoscope*, 11: 202, Feb. 1941) reports a case in a woman otherwise in good health in whom a simple mastoidectomy was done on the right side, because of mastoiditis complicating otitis media. The right ear had been discharging "profusely" for four weeks when the signs of mastoiditis developed. The drum of the ear had perforated. The left ear drum was normal. Bacteriological examination of the ear discharge showed hemolytic streptococci predominating. The operation was uneventful; but on the second postoperative day, the patient developed fever (40° C.) and erysipelas beginning in the region of the right mastoid and extending over the entire right side of the face. Under treatment with sulfanilamide (20 gr. every six hours) and roentgen-ray treatments (three treatments given every second day), the erysipelas cleared up promptly and the patient made a good recovery. Erysipelas is one of the less frequent complications of mastoidectomy; there is some difference of opinion as to the exact etiology of the erysipelas in these cases, but the majority of authors consider that the hemolytic streptococcus is the causative organism. In the treatment of postoperative erysipelas, the author considers that a combination of sulfanilamide and local roentgen-ray therapy will give the best results.

mg. showed only 25% cure. A control group of 30 mice untreated in any way showed no cessation of symptoms.

The dry compound is a pale yellow powder which neither changes color nor loses weight after being heated in an oven at 100° C. for 24 hours. It is insoluble in water, alcohol and ether but is completely soluble in tenth-normal hydrochloric acid. The compound was tested in the form of a suspension in sweet almond oil with which it forms a relatively stable suspension.

News and Notes

Sight-Saving Courses

THE National Society for the Prevention of Blindness has announced that it is cooperating with the following colleges and universities in offering, at their 1941 summer sessions, courses for the preparation of teachers and supervisors of sight-saving courses:

Wayne University, Detroit, Michigan. (Elementary course). June 23 to August 2. Director of the course: Miss Margaret Soares, Supervisor of Braille and Sight-Saving Classes, Detroit.

Western Reserve University, Cleveland, Ohio. (Advanced course). June 23 to August 2. Director of the course: Miss Olive S. Peck, Supervisor of Braille and Sight-Saving Classes, Cleveland Public Schools.

State Teachers College, Buffalo, New York. (Advanced course). July 7 to August 15. Director of the course: Mrs. Winifred Hathaway, Associate Director, National Society for the Prevention of Blindness, 1790 Broadway, New York, N. Y.

Details regarding the courses may be obtained from the university or college, or from the director in charge of the course.

Infant Death Rate

DEATHS of infants under one year of age, exclusive of stillbirths, totaled 108,846, according to a final Census report covering 1939.

This was in comparison with 116,702 similar deaths the year previous and represented a reduction in the ratio per 1,000 live births of from 51 to 48.

That the present death total for infants—equal to the total population of cities like Canton, Ohio, and Tampa, Fla.—is susceptible to further drastic decreases is indicated by the achievements of certain states. If, for instance, the entire United States achieved the same low infant death rate that Oregon has achieved, there would have been approximately 28,000 fewer infant deaths in 1939. If, on the other hand, the high rate of New Mexico had prevailed nationally, it would have meant an increase of more than 138,000 infant deaths.

The Second American Congress on Obstetrics and Gynecology

THE Second American Congress on Obstetrics and Gynecology will be held in St. Louis, Missouri, April 6 to 10, 1942. All of the meetings and both the Commercial and Educational and Scientific Exhibits will be held in the Public Auditorium.

The general plan for the program will be much the same as that of the first Congress, which was held in Cleveland, September 11-15, 1939, with sectional meetings for the various groups (nurses, public health, administrators, educators, and physicians), general sessions for all members attending the Congress and round tables. There will be evening sessions open to the general public.

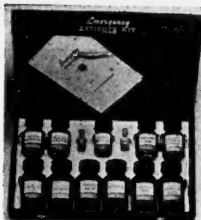
Adequate time for registration will be given the first day, before the opening of the sessions of the Congress. Admission to the Congress will be by individual membership cards only. These may be secured by payment of the five dollars registration fee, any time after September 1, 1941.

At the suggestion of the Medical Exhibitors Association, more time will be allowed for the members of the Congress to visit the Exhibits. The response to a letter sent to the firms handling products of interest to our group telling them of a second Congress has been excellent and we are assured of an excellent Commercial Exhibit.

The hotel headquarters have not been assigned to the various groups as yet, but the Medical Section and General Congress Headquarters will be in the Jefferson Hotel.

For further information, apply to the Chicago office of the Congress, 650 Rush Street.

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FOUNDATIONS OF NEUROPSYCHIATRY

By Stanley Cobb, M.D. Bullard Professor of Neuropathology, Harvard University Medical School; Psychiatrist-in-Chief, Massachusetts General Hospital. Cloth, 6 x 9, 242 pages, 12 illustrations, \$2.50.

This is a second revised and enlarged edition of the same author's PREFACE TO NERVOUS DISEASE, published in 1936 and received with real appreciation by practitioners, teachers and students. Primarily it is an introductory textbook for students and ideal for that purpose. All physicians including specialists in various fields will enjoy this inexpensive little book as a refreshing and easily readable review of a complex field by one of America's most distinguished authorities. To many physicians neurology, psychiatry, and psychology are unfamiliar fields, yet cases are frequently coming to them presenting symptoms which would be speedily recognized if every physician possessed the fundamental information so clearly and simply conveyed by this concise book.

Written in delightful style with so much evidence of broad knowledge and experience of and even enthusiasm for his subject, the book abounds in useful explanations of clinically observed facts intensely practical for the general practitioner enabling him to avoid unnecessary and perhaps misleading neurological examinations. It is a scholarly provocative work, revised to bring it in line with recent advances, which has necessitated the addition of sixty pages, while the price remains only \$2.50. The book succeeds in giving plainly the facts and correlations needed to understand the simpler workings of the central nervous system, adhering to fairly well established principles. The new knowledge about the hypothalamus, a summary of what is known of the thalamus, and a lot of new material on the frontal lobes has been added. The chapter on Cerebral Circulation is almost entirely new, and the chapter on Epilepsy has been entirely rewritten because of the great advances made by the electro-encephalograph. A chapter on Psychopathology has been added.

Dr. Cobb had intended to expand the chapters on pathology into a brief clinical neurology but when he saw the new Walshe—DISEASES OF THE NERVOUS SYSTEM which we published late in 1940 (\$4.50) he decided as he says in his preface, "This book so well takes up where I leave off that I was spared a great labor that could not have matched Walshe's excellent book."

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Medical BOOK NEWS

Edited by

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All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

Hydrocephalus

Hydrocephalus: Its Symptomatology, Pathology, Pathogenesis and Treatment. By Otto Marburg, M.D. New York, Oskar Piest, [c. 1940]. 217 pages, illustrated. 8vo. Cloth, \$3.00.

THIS is a thorough presentation of a rather difficult subject by an eminent teacher of neurology. The subject is divided into eighteen chapters and is discussed from every conceivable angle. There is a rich bibliography.

This book should have a wide appeal particularly to neurologists, neurosurgeons, and pediatricians.

IRVING J. SANDS

Menstrual Disturbances

Diagnosis and Treatment of Menstrual Disorders and Sterility. By Charles Mazer, M.D., and S. Leon Israel, M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 485 pages, illustrated 8vo. Cloth, \$6.50.

THIS work is intended especially for the family physician as a practical

guide in the treatment of sterility and menstrual disorders. It certainly contains

plenty of information, not the least valuable of which is a list of commercially available endocrine products with their relative concentration. The chapters on sterility are good and the photomicrographs are excellent. A good bibliography is appended to each chapter, but the interest of the general practitioner in these is questionable. Office procedures in diagnosis and treatment are described in considerable detail.

CHARLES A. GORDON

Electrocardiography

Electrocardiography in Practice. By Ashton Graybiel, M.D. and Paul D. White, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 319 pages, illustrated. Oblong 8vo. Cloth, \$6.00.

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• What most attracted my attention was, the irregularity of his breathing, and remarkable slowness of the pulse, which generally ranged at the rate of 30 in a minute. Mr. Duggan informed me that he had been in almost continual attendance on this gentleman for the last seven years; and that during that period he had seen him, he is quite certain, in not less than twenty apoplectic attacks. . . . When they attacked him, his pulse would become even slower than usual; his breathing loudly stertorous.

Robert Adams

Dublin Hospital Reports 4:397, 1827.

ology—this time in electrocardiography. Graybiel and White have written an extremely good book, full of sound information and beautifully illustrated. No one interested in tracings can afford to pass by this volume.

ANDREW M. BABEY

Photobiology

Photodynamic Action and Diseases Caused by Light.

By Harold F. Blum, Ph.D.
New York, Reinhold Publishing Corporation, [c. 1941].
309 pages, illustrated. 8vo.
Cloth, \$6.00.

THIS interesting monograph fills a definite place in the literature on the medical aspects of radiations. There has long been a need for an authoritative work in English on the deleterious actions of light and the factors associated with their production. This is particularly so since there have been a number of views expressed on this topic without a critical summary.

The book is so divided in sections that those using it for reference upon a particular topic may find a comprehensive, yet compact, digest of the views of the problem at hand. The first two sections discuss the fundamentals of radiation. Part 3 deals with diseases of domestic animals caused or aggravated by light. The fourth and longest section deals with the reactions of the human to light. The book includes a discussion of normal sensitivity and sunburn followed by a well rounded survey of urticaria solare. The author then devotes the remainder of the book to photosensitization by various agents and the effect of unduly long exposure to radiations.

This book is recommended to all who have even a passing interest in the effect of radiations in the visible and near ultraviolet.

GEORGE B. RAY

A Prison Surgeon's Experiences

Men at Their Worst. By Leo L. Stanley, M.D. New York, D. Appleton-Century Company, [c. 1940].
322 pages, illustrated. 8vo. Cloth, \$3.00.

THIS is a book written for public consumption, and the author makes no attempt to be particularly scientific in his discussions. Nevertheless, there are presented evidences of originality, progressive thinking, and resourcefulness.

The author vividly describes a struggle of more than two decades during which he developed a most primitive type of medical organization in a large prison

into a modern, scientific hospital with facilities for every type of investigation and therapy. Here he pioneered with testicular implantation, spinal anesthesia, and improvements in sanitary conditions for prisoners.

This book is a remarkable autobiography, one that should hold the interest of everyone who reads it.

A. M. RABINER

Bacon's Proctology

Anus, Rectum, Sigmoid Colon: Diagnosis and Treatment. By Harry E. Bacon, M.D. Second edition. Philadelphia, J. B. Lippincott Company, [c. 1941].
8vo. Cloth, \$8.50.

THIS is an excellent summary of diagnosis and treatment in the field of proctology. It serves as a comprehensive review for the specialist; and the bibliography at the end of each chapter will aid him in finding the latest literature on any subject in question. It will afford the general practitioner and general surgeon the greatest benefit.

The book begins with a clear description of the anatomy, and demonstrates the structures pictorially far better than does the average anatomical work. Methods of examination of the rectum by inspection, palpation, radiography and laboratory means are given in detail. Treatment is discussed in an especially satisfactory manner. Each popular method is described; the author evaluates it according to results in his own and other large clinics. These personal opinions constitute a direct help to the reader. They eliminate much of the confusion of one faced with a large variety of procedures.

MEDICAL TIMES, MAY, 1941

Treatment by medical means gives the desired balance of viewpoint, and under this heading we find the medical care of proctitis, colitis, parasitic and venereal diseases.

The general surgeon will find in the volume all the best known operative procedures involving the left half of the colon and rectum. The technique of Miles Babcock, Rankin and others are concisely given along with illustrations of important steps in each operation.

Those who are already familiar with the first edition will find here new material of value and interest. The author gives his method of combating fall in blood pressure during the period of spinal anesthesia. He combines neosynephrin hydrochloride with his procain for the superficial skin injection, and varies the dosage according to the original pressure readings. Measures for prevention of post-operative pain are given, though the author does not apparently favor the oil soluble anesthetics, which many have found so satisfactory. There are additions to the list of hemorrhoid and prolapse operations, and some discussion of the use of sulphanilamide. The technique of Devine is described—in the formation of the defunctioning colostomy.

The chapter on megacolon gives all the salient points of treatment, as in the previous edition. Those specially interested in this field would have enjoyed information on the subject of dolichocolon, or bowel of increased length—as distinct from that of megacolon—or bowel of increased diameter. The two are often confused, and very little has been written on the subject of dolichocolon.

LAURENCE G. BODKIN

Gastroenterology

Diseases of the Digestive System. Edited by Sidney A. Portis, M.D. Philadelphia, Lea & Febiger, [c. 1941]. 952 pages, illustrated. 8vo. Cloth, \$10.00.

THIS excellent book is a compilation of articles by a number of authors, edited by Dr. Portis, who modestly contributes but one chapter, a very good one on Liver Diseases. The first half of the book is devoted to general considerations. Part I, comprising chapters on the history

of gastroenterology and on anatomy and physiology, is exceptionally good. Part II on "Etiologic Factors," places much emphasis on the neuroses and neurogenic disturbances of the gastrointestinal tract. Then follow fine articles on gastrointestinal manifestations of cardiovascular, renal and urologic disease, of anemias and arthritides, and of endocrine dyscrasias. Gastrointestinal tuberculosis and allergy and the relation of the teeth to gastrointestinal diseases are well covered. An excellent chapter on the influence of diets concludes the series.

The second half of the book, comprising Parts III IV and V is devoted to actual diseases of the digestive system. The editor used great care in selecting his authors, so that each chapter is really an excellent and exhaustive contribution to its subject. As is to be expected, some overlapping is bound to occur, but this gives an opportunity to compare opinions. While not every gastrointestinal disease is covered in detail, the whole book comprises an excellent reference book and a practical compendium for the practitioner and student of gastroenterology.

A. F. R. ANDRESEN

"Do You Like Romance, Doctor?"

Medical Center. By Faith Baldwin. New York, Farrar & Rinehart, Inc., [c. 1940]. 370 pages. 8vo. Cloth, \$2.50.

THIS book is a collection of six long short stories which have their backgrounds in Lister Memorial General Hospital in New York,—and we do not mean, Columbia or Cornell Medical Centers,—and the personae dramatis of which are the Diagnostician, the Clinic Aide, the Dietitian, the Charge Nurse, the Intern and the Special Nurse. "Hospitals," according to the author, "white, hygienic, impersonal and routinized, appear unlikely places for the breeding of romance. But there is no more fertile field." She has one of her characters, the dietitian, make the observation, "almost everyone falls in love in hospitals." It might reasonably be expected, therefore, from such an approach, that the stories will treat of the romantic and the human aspects of hospital life,—with, of course, a little sex,—rather than

the professional and scientific sides. There is a Portrait Gallery from Medical Center of 13 drawings of selected characters. Oh Doctor. Oh Nurse.

JOSEPH RAPHAEL

An Annual for Psychologists

The Nineteen Forty Mental Measurements Yearbook. By Oscar Krisen Buros, Editor. Highland Park, N. J., The Mental Measurements Yearbook, [c. 1941]. 8vo. Cloth, \$6.00.

THIS *vade mecum* of information concerning current psychological tests is indispensable to all those working in the field of applied psychology. Herein may be found critical reviews of various standardized tests, including achievement batteries, character and personality, English, fine arts, foreign languages, intelligence, mathematics, reading, science, social studies, vocations, and miscellaneous topics. Two hundred fifty psychologists, teachers, and test technicians have cooperated in making this volume a "must" book for those interested in this field.

The book is well documented with pertinent references and indices of titles, publication and periodical directory. Various size type is utilized which makes for ready reference and clarification. The format is attractive and the construction sufficiently sturdy to withstand the heavy use which this type of publication deserves.

FREDERICK L. PATRY

The Arthritides

Diagnosis and Treatment of Arthritis and Allied Disorders. By H. M. Margolis, M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 551 pages, illustrated. 8vo. Cloth, \$7.50.

THIS is one of several valuable books which have recently appeared in the English language on the subject of arthritis. Its some five hundred pages are divided into eight sections: atrophic arthritis; the prevention and correction of deformities in chronic arthritis (including physical therapy); hypertrophic arthritis; rheumatic fever; specific arthritides; miscellaneous conditions like fibrositis, Dupuytren's contracture, intermittent hydrarthrosis, etc. A section on shoulder pain including subacromial bursitis, periarthritis of the shoulder, cervical rib, etc., and finally about a hundred pages on the sub-

ject of low back pain and sciatic pain.

It is regrettable that the author went into so little consideration of the immunologic aspects of atrophic arthritis. The reviewer subscribes to the author's warning of danger in promiscuity of gold therapy in the hands of the inexperienced.

The section on deformities is helped by the excellent photographs and diagrams.

This book will prove a valuable aid to the general practitioner for quick reference.

GEORGE E. ANDERSON

A Deficiency Disease

Clinical Pellagra. By Seale Harris, M.D. St. Louis, The C. V. Mosby Company, [c. 1941]. 494 pages, illustrated. 4to. Cloth, \$7.00.

ALIFETIME'S experience with pellagra has qualified the former professor of medicine at the University of Alabama to write about the disease with an intimate knowledge of clinical detail, fortified by wide acquaintance with the world's literature on all phases of the subject. Dr. Harris describes at firsthand nearly the entire course of the development of our knowledge of pellagra in the United States, from the date of its earliest recognition in epidemic form to the time of the introduction of nicotinic acid therapy. The work is obviously a labor of love to which the author has imparted an individual note by the frequent use of the first person, by ready expressions of his own opinion, and by accounts of his own experiences. This leads to a discursive and sometimes repetitious style without detracting from the essential value of this truly fine and substantial achievement. Sixty-six illustrations and four color plates add much to the book's value.

ELLISTON FARRELL

Child Behavior Analyzed

The Doctor and the Difficult Child. By William Moodie, M.D. New York, The Commonwealth Fund, [c. 1940]. 214 pages. 8vo. Cloth, \$1.50.

DR. WILLIAM MOODIE, an English psychiatrist, has written this book, concerning disturbances of behavior or personality in children, with a view towards helping the doctor prevent future mental or nervous breakdown in later life. The problems of behavior in the child are dis-

cussed from a general point of view; then each problem is specifically analyzed. For the average practitioner this book makes for interesting and helpful reading.

STANLEY S. LAMM

More About the Vitamins

What are the Vitamins? By Walter H. Eddy, Ph.D. New York, Reinhold Publishing Corporation, [c. 1941]. 247 pages, illustrated. 8vo. Cloth, \$2.50.

THIS is a comprehensive survey of pertinent facts about vitamins. Since more and more people are becoming interested in these important nutritive factors Dr. Eddy has given us clearly and with extreme precision an analysis of knowledge available today.

After a brief glance at the history of these substances and the origin of the name "vitamin," Dr. Eddy treats each factor separately, giving careful study to their chemical composition and known physiological action in the body.

He analyzes the functions of vitamins A, B-1, B-2, P-P (nicotinic acid), B-6, and the other members of the B complex, as well as vitamins C, D, P (eriodictyol),

E, and K, citing the original research and experiments, qualifying each therapeutic indication of the vitamin. However, specific qualities are credited to vitamins only when the experiments have been proved conclusively.

Appendices contain the chemical natures and formulas of the vitamins and the quantitative human requirements of each. Tables of the latest vitamin content of foods are presented and will be found helpful to nutrition workers.

MORRIS ANT

Old-Time Military Hospitals

Medical Work of the Knights Hospitallers of Saint John of Jerusalem. By Edgar Erskine Hume. Baltimore, Johns Hopkins Press, [c. 1940]. 371 pages, illustrated. 4to. Cloth, \$3.00.

THIS volume contains the first comprehensive account in English of the medical work of the Knights Hospitallers of St. John of Jerusalem. It is an interesting and authoritative account, completely documented, and will be extremely useful to anyone interested in this subject.

GEORGE ROSEN

BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

Hemorrhagic Diseases: Photo-Electric Study of Blood Coagulability. By Kaare K. Nygaard, M.D. St. Louis, C. V. Mosby Company, [c. 1941]. 320 pages, illustrated. 8vo. Cloth, \$5.50.

Medicine and Human Welfare. By Henry E. Sigerist, M.D. New Haven, Yale University Press, [c. 1941]. 148 pages, illustrated. 8vo. Cloth, \$2.50.

The New International Clinics. Original contributions: Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume 1, New Series 4. Philadelphia, J. B. Lippincott Company, [c. 1941]. 304 pages. 8vo. Cloth, \$3.00.

Williams Obstetrics: A Textbook for the Use of Students and Practitioners. By Henricus J. Stander, M.D. Eighth edition. New York, D. Appleton-Century Company, [c. 1941]. 1401 pages, illustrated. 4to. Cloth, \$10.00.

Spermatosa and Sterility: A Clinical Manual. By Abner I. Weisman, M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 314 pages, illustrated. 8vo. Cloth, \$5.50.

The Chemical Action of Ultraviolet Rays. By Carleton Ellis and Alfred A. Wells. Revised and Enlarged Edition by Francis F. Heyroth, M.D. New York, Reinhold Publishing Corp., [c. 1941]. 961 pages, illustrated. 8vo. Cloth, \$12.00.

Temperature: Its Measurement and Control in Science and Industry. Papers Presented at a Symposium held in New York City, November, 1939,

under the auspices of the American Institute of Physics with the cooperation of National Bureau of Standards, National Research Council. New York, Reinhold Publishing Corp., [c. 1941]. 1368 pages, illustrated. 8vo. Cloth, \$11.00.

Vitamins, What They are and How They Can Benefit You. By Henry Borsook, M.D. New York, The Viking Press, [c. 1941]. 212 pages. 8vo. Cloth, \$2.00.

America Organizes Medicine. By Michael M. Davis. New York, Harper & Brothers, [c. 1941]. 335 pages. 8vo. Cloth, \$3.00.

The Essentials of Applied Medical Laboratory Technic. Details of How to Build and Conduct an Office or Small Hospital Laboratory at Small Cost. By J. M. Feder, M.D. and John Elliott, Sc.D. Charlotte, Charlotte Medical Press, [c. 1940]. 241 pages, illustrated. 4to. Cloth, \$5.00.

An Introduction to Dermatology. By Richard L. Sutton, M.D., and Richard L. Sutton, Jr., M.D. Fourth edition. St. Louis. C. V. Mosby Co., [c. 1941]. 904 pages, illustrated. 8vo. Cloth, \$9.00.

Man—The Mechanical Mist. By G. H. Estabrooks. New York, The Macmillan Company, [c. 1941]. 251 pages. 8vo. Cloth, \$2.50.

Feeding Our Old Fashioned Children. A Background for Modern Mealtimes. By C. Anderson Aldrich, M.D. and Mary M. Aldrich. New York, The Macmillan Company, [c. 1941]. 112 pages, illustrated. 8vo. Cloth, \$1.75.

ASSOCIATED PHYSICIANS OF LONG ISLAND

—Concluded from page 211

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Compensation Decisions

COURT decisions on the Workmen's Compensation Law from July 1935 to September 1940 have recently been issued in the printed form of Special Bulletin No. 204 by the State Department of Labor. This Bulletin contains not only the decisions handed down during that period but also the full texts of court opinions. The decisions are augmented by syllabi and editorial notes and are fully indexed. Special Bulletin No. 204 is the eighteenth of a series of similar Special Bulletins making available in complete and carefully

classified form decisions rendered under the Workmen's Compensation Law from the time of its inception in 1914 until Sept. 1, 1940. The Bulletin contains 634 pages and covers about 700 cases. The cases are arranged sectionally according to the Workmen's Compensation Law and are complemented by notes prepared from the records on appeal. Headnotes presenting the issues and the courts' decisions preface each case. A complete list of cases and a 20-page descriptive word index are appended. The price of Special Bulletin No. 204 is one dollar.

EDITORIALS

Interesting Reaction to An Anti-Trust Law Decision

THE *New York Times* greeted the recent decision of a Federal jury against the American Medical Association with some significant editorial remarks: "It opens the way to wider developments." This country "will need more than one type of medical practice." The decision will, if it stands, "clear the way for carrying out health plans which have hitherto been frustrated." And "out of the experimenting various systems of medical practice are bound to emerge—systems that will be a guide to legislators and that will enable us to avoid the mistakes of Europe."

Eyes on Europe, of course.

The April issue of the *Westchester Medical Bulletin*, published by the Medical Society of the County of Westchester, inquires pertinently: "Is the present interest of the Federal Government in compulsory health insurance, as a 'defense measure,' a sign that the dice are loaded?"

MEDICAL TIMES, JUNE, 1941



The Shape of Things to Come

IN a striking editorial in the *New York State Journal of Medicine* of February 15, 1941 the doctors are pictured as pondering in their minds "about this thing called socialism, this cooperative movement in this hemisphere which commences now to produce many things in America: Social Security, and guns and tanks, compulsory sickness insurance, and men marching in uniform in peacetime, and debt, and warplanes; the socialization of medicine, and warships, torpedoes, bombs; and lease-lend bills and taxes for the happy folk to pay so that they can be more expeditiously socialized in the shadow of democracy."

The editor overlooked something—PROHIBITION—which, of course, looms inevitably ahead.

Putting Two and Two Together

THE TNEC (Congressional Monopoly Committee) reported on March 31

that concentration of wealth in the United States was "undermining the foundations of both free enterprise and free government."

About the same time that we read press reports of this essay on the "strangling" of a nation, we were struck by the remarks of Frederick Osborn, chairman of the Joint Army and Navy Committee on Welfare and Recreation, speaking before the American Eugenics Society. He said that "leadership does not come from training alone, but from the training of able persons. We must create a society in which at every economic level parents who are responsible and competent will have more children than their irresponsible neighbors. That is not the sort of society we have today." Whereupon Dr. Frank Lorimer made the point that the gross economic handicaps now attached to parenthood must be removed.

Human Sacrifice

EVEN among civilized people one sees occasional evidence of a yearning for human sacrifice under one disguise or another, something which is commonly associated with primitive or semicivilized customs alone.

In both cases there is complete rationalization of the yearning and of its translation into action.

It was the custom of the Montezumas, emperors of Aztec Mexico, to sacrifice captives to the god of war. To these semicivilized people this was a glorious religious rite, fitting, seemly and logical, and they appear to have outdone all others in this regard. It satisfied every psychological, social and political requirement, and

was a supreme affirmation of propriety, justice and righteousness, sanctified by priests. No thought of brutishness in our sense of the word entered their minds. Such sacrifice was the utmost possible expression of civic virtue. Even to the victims themselves, so richly honored, it brought happiness, to the Aztec way of thinking.

Somewhat shyly, this yearning for the "boon" of human sacrifice obtrudes itself even in our own environment, with sophistical justification and rationalization that recall the Montezuma régimes. Under the name of euthanasia it seeks similarly to legalize the sacrifice of human life for allegedly laudable reasons.

The rationalization of the thing is made to seem as fitting, seemly and virtuous as was the old custom of the Aztecs. To the god of expediency and upon his altars are to be sacrificed certain selected captives of fate. Captives they will be, under the euphemism of "protective custody." The obscene rite is argued for upon the ground of humanitarianism in addition to all the Aztec reasons, but we submit that the destruction of the sick is an act even more despicable than the sacrifice of prisoners of war.

Shall we yet see in our community this new type of control over our lives, with licensed competing stations advertising research, facilities, and superior methods? One can fancy a keen rivalry, with such invidious slogans as "We have never been obliged to resort to asphyxia."

In short, shall we ever be Aztecs? Shall we ever revert to the semicivilized category implicit in such collective behavior, with physicians as its principal implements? At this juncture in the world's affairs, queer as they are, it is impossible to believe it.



A METHOD OF RECORDING AND REPRODUCING

Heart Sounds

ARTHUR L. SMITH, A.M., M.D., F.A.C.P.

Lincoln, Nebraska

Why Amplify and Record Heart Sounds?

THERE is nothing as fleeting or undependable as the human memory. Therefore, any method that can make permanent records of any essential bodily function, which at present can be preserved only by the human memory, should be welcomed by the medical profession.

For example, the examining physician's impression of the many peculiarities of human heart sounds—normal or abnormal—cannot long be accurately retained. Therefore, if it is of clinical value to know the exact condition of these sounds at the time of examination, then of how much more value would it be if the heart sounds were recorded for future reproduction and comparison with later changes in the same heart? Also, if accurate knowledge of heart sounds is advisable, we should be prepared to collect this information by any devisable means.

WE do not auscultate a heart to hear murmurs only but also to know the rate and type of rhythm or arrhythmia; intensity, duration and accentuation of the heart sounds; absence of one or both sounds; normal and abnormal sounds such as systolic clicks, mitral opening snaps, third and fourth sounds and reduplication of sounds; systolic, protodiastolic, presystolic and summation gallop rhythm; duration of the systolic and diastolic silences; pericardial friction rubs; and differentia-

tion of sounds from various types of murmurs which are of functional or organic origin. The point of origin of heart sounds cannot always be accurately located by the area in which they are best heard on the surface of the chest. The combinations of these sounds are often so bewildering it is impossible to differentiate them without graphic registration and measurements or by amplification and disc recording.

Thus, to the detriment of the patient, confusion of harmless and pathologic sounds results. However, these latter subjects cannot be dealt with in this article for it would be unduly prolonged.

THE reasons (singly or combined) many heart sounds cannot be clearly heard by the unaided ear are: (1) the frequencies of the sounds are too low; (2) the energy liberated is too small; (3) the chest wall is too thick; (4) the heart rate is too fast; (5) noises inside or outside the chest are too great or (6) the human ear is not sensitive enough. The common stethoscope seems to be of little value in overcoming these difficulties.

Since most of us use a stethoscope there must be some reasons for so doing, such as: (1) the heart sounds are amplified and more clearly heard; (2) the examiner appears less awkward and more at ease than when listening with the unaided ear, or

(3) the physician wishes to make an impression on the laity with this "movie" symbol of medicine.

However, Macfatlan¹ believes the stethoscope and amplification of heart sounds are unnecessary and that the former reduces the efficiency of the ear, but he does admit the accurate knowledge of heart sounds is of clinical value and the crystal microphone is free from distortions.

Since the advent of the crystal microphone much advanced knowledge of heart sounds is possible by the following means: (1) the stethograph visualizes and photographs the heart sounds so they may be accurately measured; (2) the cardiophone amplifies the heart sounds so they may be distinctly heard by the average ear; (3) the cardiophonograph accurately records the heart sounds and they may be reproduced at various rates and intensities for careful analysis. These records (1 and 3), like electrocardiograms and roentgenograms of the heart, can be permanently preserved for future reference and comparison.

Since murmurs do not suddenly burst into full audible bloom without a budding stage, it is thought the sub-audible murmurs can be discovered by these methods, treatment for the underlying lesion can be instituted earlier and a more favorable outcome should be expected.

The Stethograph

The stethograph used in visualizing the heart sounds is that developed by Lockhart² and it has been adequately described by him.

The Cardiophonograph

Description of the Recording Apparatus

THIS instrument, which I have developed and have been using for three years, is built into a compact carrying case and the loud speaker is in the detachable cover (Figure 1). A long cord connecting the amplifier allows the speak-

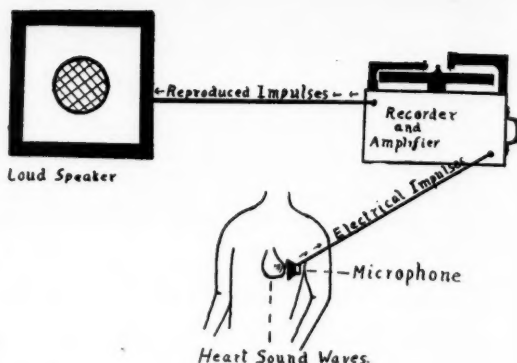


Figure 1

Schematic diagram of the cardiophonograph. The sound waves from the heart, picked up by the crystal microphone and converted into electrical impulses, are passed along to the amplifier, then to the cutting head and finally to the steel needle which cuts the permanent impressions in the acetate disc. To reproduce the heart sounds the impulses are taken up from the disc through the pickup, then amplified and carried to the loud speaker where they again become sound waves. The cardiac sounds, changed into electrical impulses, may be conducted through the amplifier to the loud speaker and thus broadcasted directly from the heart.

er to be moved to various places in the room or outside if it is felt the patient should not hear the abnormal heart sounds.

A four stage amplifier is placed between the microphone and the cutting head and has a range of 120 decibels. There is a three stage amplifier between the pickup and the loud speaker for reproduction. This has a range of 70 decibels. The frequency response is from 50 to 10,000 cycles per second. A selection tone control for reproduction of either low or high frequencies will increase or decrease these at the will of the operator.

The cutting head is a permanent magnetic type.

A monitoring calibrated meter is used for volume control when recording and the loud speaker is also in operation at the same time so one may select exactly what one wishes to record.

The pickup is of the crystal type. The input impedance matches the crystal microphone. The microphone is placed over a bell which is composed of soft rubber and this separates it from the chest wall by a chamber of air. The heart sounds, after leaving the chest wall, must pass through this column of air before activating the microphone. The loud speaker is of the electrodynamic type and eight inches in diameter.

Cutting the Records

For cutting records the revolutions of the turntable are 78 per minute; thus the records can be reproduced on any phonograph. The loud speaker being used as a control, the microphone can be moved about on the chest (like a stethoscope) and, when the most favorable position is found, the recording can begin. Comments can also be recorded on the disc.

The records are of two sizes, six inches and ten inches in diameter. The smaller allows approximately 1½ minutes and the larger 3½ minutes playing time per side, if allowed to revolve at the same rate as when recorded. The discs are made of an acetate base on an aluminum plate. This permits easy cutting by a steel needle carried in the recording head. The substance is hard and allows a great number of auditions (from 100 to 700 have been tried) with little wear of the record resulting even when steel needles are used.

Reproducing Records

THE records can be reproduced immediately after cutting and if any imperfections are present or the exact sounds wanted are not recorded, another record can be cut. In reproducing the heart sounds high or low frequencies can be selected, but with the lower frequencies less surface noise is heard. Also, all sounds emanating from the heart are in the lower frequencies, so these vibrations are usually selected in reproduction, but if sounds are to be sharp and clear-cut, then the higher frequencies are emphasized. The amplification can be so increased that the sounds may be heard clearly in a large auditorium.

The records can be reproduced on any phonograph but poor instruments will give poor results. The built-in phonograph in radios is ideal, for frequencies can be selected as desired. In playing, if a two speed turntable is not obtainable, the speed of the turntable can be decreased by pressure on the side of it and thus, with the reduced rate, the sounds can be more easily analyzed.

The Cardiophone

When the heart sounds are picked up by the microphone, the electrical impulses are carried through the four stage amplifier directly to the loud speaker. A frequency selector, as desired, increases or decreases the sounds of high or low frequencies. The microphone must be "sealed" to the chest wall or "squeals" will develop.

The heart sounds of adult, child or fetus can be broadcasted directly from the patient. This has been done many times in medical schools, hospitals, clinics, medical meetings and at lay meetings sponsored by the Lincoln Health Department.

Number and Ages of Patients

I HAVE over 500 discs of recorded heart sounds in patients from six weeks to 78 years of age. In these all types of rhythms and arrhythmias, many variations in normal and abnormal heart sounds, in murmurs, in gallops and in third (protodiastolic) and fourth (presystolic) sounds have been recorded. Recordings of 58 fetal hearts were attempted and 52 were successful, the fetal ages varying from 5½ months to just before delivery. One-half the disc is occupied by the fetal and the other by the maternal heart sounds. In one fetus a systolic murmur was recorded and six weeks after birth the systolic murmur was again recorded.

Practical Value of Instrument

For Clinician

THE heart sounds can be amplified and audited directly from the patient as long as wished. The recorded heart sounds

can be reproduced at leisure, given careful study and then filed for future reference. Evolution of any heart disease can be accurately followed through a series of records and will supply an invaluable source for investigative medicine.

For Teaching Heart Disease

RECORDS of heart disease can be accumulated and the whole auscultatory course of the disease can be presented in a short time.

Since no amount of description will replace the actual hearing of heart sounds, the recorded discs can be audited until the sounds are mastered. Next the heart sounds can be broadcasted directly from the patient to the students.

When properly prepared by this plan, the class can be divided into smaller groups and the living heart then intelligently auscultated.

For Students

THE student can be supplied with heart records—with proper notations on them—and in the privacy of his own room, without interference from teacher or patient, he can reproduce the heart sounds until he is entirely familiar with them.

Stethograms of the same patient will

allow him to see as well as hear these sounds.

For the Obstetrician

BY broadcasting the fetal heart sounds through the loud speaker all in the delivery room may continuously follow the changes in the fetal heart.

To those of us who have done this, many extreme fetal heart rates and arrhythmias in normal hearts have been observed and considerable study will be required to differentiate the normal from the pathological.

Permanent records of fetal heart response to drugs administered to the mother before and during delivery can be made.

If the viability of the fetus is in question, this adds another method to assist in the accuracy of the diagnosis.

By this method the student can unquestionably hear the fetal heart sounds.

For the Surgeon

THE heart sounds of the operative patient can be made audible in the operating room and each interested person can, according to his experience, interpret the condition of the patient to his own satisfaction.



Summary

(1) A portable instrument is described for broadcasting, recording, and reproducing human heart sounds from the fetal period to that of old age.

(2) It will be of value in all conditions in which heart sounds should be carefully studied and permanently preserved for future reference.

(3) It will make some of the sounds below the threshold of hearing audible and thus the "silent area" in the heart will be decreased.

(4) It will make possible the broadcasting of heart sounds in (a) the clinic, (b) the teaching amphitheater, (c) the obstetric department and (d) the operating room.

(5) If accurate recognition of heart sound phenomena is of clinical value in the diagnosis of heart disease, and since most of us have only an average acuity of hearing, it is believed the described mechanism will be of practical clinical assistance in increasing our knowledge of functional and organic changes in the heart and thus aid in the proper treatment of cardiac abnormalities.

References

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1001 FEDERAL SECURITIES BUILDING

THE PROSTATE GLAND

and Prostatism

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THE prostate gland is a male sexual organ, and has been the subject of exhaustive study by innumerable investigators regarding its embryology, mature development, anatomy, physiology and pathology. In passing, it is of interest to note that from a wealth of data collected during the past one hundred years on the anatomy of the urogenital tract in mammals, E. T. Engle, in the *Journal of Mammalogy* (Baltimore, 1926), lists the findings of twenty authorities on zoology, and comments thus: "With few exceptions, the prostate gland has been found in all species above the monotremata." An exception given in his list is the common squirrel, but since then, Mossman has dissected many of this species, and declared that they possess a prostate. The other exception is the cervidae or deer, but Engle doubts the accuracy of the observer, and believes that the cervidae have prostates of the disseminate type, as in the buck and ram. In the same schedule, the seminal vesicles are reported

to be present in 50 per cent, and the bulbo-urethral glands in 75 per cent of mammals.

Lowsley's oft quoted work on the embryology of the human prostate is a classic, and is generally accepted as authoritative. He describes the prostate as arising from five sets of prostatic glands, which are outgrowths of the urethral epithelium, both above and below the entrance of the male ducts. It is believed that all of the prostate is entodermal in origin, no buds coming off the mesodermal floor of the upper urethra. The tubules arise in eleven weeks in five distinct groups, and total an average of sixty-three. The surrounding mesenchyme differentiates both connective tissue and smooth muscle fibers, into which the prostate buds grow. The gland is described, therefore, as consisting of five lobes: an anterior, posterior, median and two lateral. In the adult, however, the anterior lobe is rarely present, only a band of connective tissue joining the lateral lobes, known as the anterior commissure, being found. The posterior lobe is also wanting, and it is believed that its supposed presence was due to an error, in mistaking the posterior lamella

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for a separate lobe. This leaves the adult prostate, as generally described in anatomies, as consisting of two lateral lobes and one median lobe.

The substance of the gland consists of smooth and striated muscle; spongy and glandular tissue; some elastic fibers, and scant interlacing connective tissue prolongations from the capsule. The prostate gland is a pelvic organ, horse-chestnut-like in shape, and is situated below and posterior to the symphysis pubis, to which it is held by the puboprostatic ligaments; also by the superior fascia of the urogenital diaphragm, which invests the prostate and the commencement of the membranous portion of the urethra; and finally, by the anterior portions of the levatores ani, which pass backward from the pubis, and embrace the sides of the prostate. The ejaculatory ducts pierce the lateral lobes in an obliquely downward and forward direction, opening on their respective sides near the summit of the verumontanum in the prostatic urethra. Between these openings lies the sinus peculiaris or utricle, sometimes alluded to as the protometra, the uterus masculinus, or the vagina masculina. In size, the prostate measures about one and one-half inches transversely at its base; three-quarters of an inch anteroposteriorly, and one and one-quarter inches in its vertical diameter. The parenchyma, or secreting portion, consists of some fifteen to twenty follicular pouches in each lateral lobe. Their ducts anastomose, and many of them pour their secretion into the urethra by distinct orifices, but especially by two principal ducts which open on each side of the verumontanum near its upper portion. Their secretion, mixed with that from the testes, seminal vesicles and Cowper's glands, constitutes the seminal fluid. The glandular elements of the prostate are anatomically divided into three sets: the mucosal or urethral glands, the submucosal glands, and the deeper or outer true prostatic glands, all of which pour their secretion into the prostatic urethral sulci.

Etiology

THE specific cause that ushers in prostatic hypertrophy is not known, and various theories have been from time to time offered, but discarded as unconvincing. Marion, after enumerating venous congestion, vesical calculus, stricture of the urethra, urethritis and prostatitis, syphilis, arteriosclerosis, and the so-called diatheses, says, that the only one meriting discussion is chronic posterior urethritis and prostatitis, which in certain cases may be admitted, and this would be in conformity with the notions of pathology. However, among many cases of prostatic hypertrophy, he found no antecedent inflammation, and he concludes by declaring that in reality, only one influence has been well demonstrated, and that is age, and that he prefers to confess that, to him, the cause is unknown.

Young also says that it is not known what initiates the hyperplasia, and notes that it is associated with senescence, that most of his cases were in married men, and that none have come from the celibate priesthood; and further, that sexual repression, when the desire is present, and pre-existing gonorrhea or other infections, cannot be said to be proven as a cause. Herein is agreement with Marion, and these views are generally accepted the world over. In my own experience, I feel quite certain that many of my cases with adenomatous hypertrophy never had gonorrhea nor any other local infection, while others gave a history of gonorrhea. In all cases, I was most particular in getting complete information in this respect, and I fully agree, therefore, that it cannot be attributed to any one cause. Prostatic enlargement has, in recent years, been emancipated from the secrecy and bad moral implications which, to the hushed dismay of the respectable victim and his family, associated it as inseparable from gonorrhea, syphilis and debauchery. Statistics show that about 34 per cent of the adult male population is affected with some enlargement of the prostate gland after the fiftieth year, and about one-half of this number suffer from resulting symp-

toms. A small percentage is affected between the fortieth and fiftieth year, and a rare case under forty years is occasionally seen.

Pathology

CIECHANOWSKI says that the nature of the prostatic mass or volume is due to a dilatation of the acini, provoked by stricture or obliteration of their ducts by periglandular inflammation. Marion states that benign enlargement of the prostate gland begins in the periurethral glands, which are superficially situated, proximal to the verumontanum and posterior to it near the vesical neck. The growth assumes various shapes and volumes, growing posteriorly intra-urethrally or intravesically, and is made up of spheroid masses, bound together by connective tissue and muscle fibers.

In 1905, Motz and Perearnau gave it as their opinion that hypertrophy of the prostate commences in, and is due solely to the central, periurethral prostatic glands, and further declared that the prostatic glands proper take no part in the adenomatous formation, but are compressed peripherally by the growth. Marion quotes Marquis, Cunéo, Papin, and Verliac as sustaining this opinion. This viewpoint is supported by the finding of pieces within the vesical sphincter at the time of enucleation, and the fact that the ejaculatory ducts and the verumontanum are intact, having been pushed or crowded downward and backward by the adenomatous mass; also, that the intravesical mass is associated and connected with the lateral intra-urethral enlargements. Furthermore, after the adenomatous mass has been removed, examination of the patient months later discloses a practically normal prostate. It appears proven and accepted, therefore, that adenomatous enlargements of the prostate gland begin in the mucous, or submucosal, periurethral glands. However, Young cites an exceptional case, where the outer or prostatic glands proper were involved, accounting for recurrence of the hypertrophy after enucleation, and Marion admits of this possibility.

In this connection, I have had occasion to re-operate on two cases of recurrent adenomatous enlargement, each one occurring, strangely enough, ten years after the original enucleation, and I recently saw a patient who has a recurrent adenomatous enlargement, thirteen years after the original operation. These experiences are in harmony with the views expressed above, and although there is no proof of the origin of these enlargements, or explanation for their recurrence, my opinion is that some small original spheroids were left at the time of the first enucleation.

A NEW and comparatively recent idea regarding the pathology of adenomatous growths was reported originally by Reischaur in 1925, and later in 1939 by Deming and Neumann, all of whom, after painstaking investigations, believe that the initial lesion is a fibrous nodule, into which an early and rapid penetration of glandular elements takes place. These nodules stimulate epithelial proliferation of any ductal or glandular tissue immediately in contact with their borders. Only in the absence of adjacent glandular structures can nodules develop as pure fibromas, which does happen in about 3 per cent of the cases, according to the figures of Albarran, Halle, Papin and Verliac. More recently, I. E. Le Duc, *Jour. of Urol.* 42:1217-1241, Dec. 1939, in his studies, confirms the evidence of Reischaur, and of Deming and Neumann, that the essential lesion of prostatic hypertrophy is the nodular proliferation of fibrous tissue, into which glandular penetration and growth take place only as secondary phenomena.

The glands taking part in the formation of prostatic hypertrophy, in Le Duc's studies, appeared to be entirely of the submucosal variety. This author concludes that anatomically, the prostate may be considered as being composed of two major or lateral lobes, and one smaller median lobe. The latter may sometimes be replaced by a prespermatic commissure consisting of interlacing lateral-lobe ducts; he concludes, furthermore, that there is an entire absence of a posterior lobe in the adult

gland; also that the posterior lamella found in prostatic hypertrophy, which really represents compression peripherally of the true prostatic glands by the hypertrophied spheroids, has probably been confused with, and taken for, a posterior lobe. No anterior lobe was demonstrated by this author's work.

Not infrequently we find numerous bead to pea-sized, brownish to black colored calculi lying between the hypertrophied mass and the posterior layer of compressed, true prostatic glands. After the enucleation, if a spheroid is incised, the cut surfaces present a bulging, spongy appearance due to released tension of cystic formations, giving rise to a cream-like exudate which is often mixed with pus from small abscesses. Hence reports from the laboratory nearly always include a diagnosis of prostatitis.

Symptoms

THE size of the prostatic enlargement and the intensity of the symptoms do not always bear a corresponding relationship. It is the position of the growth and the congestion or inflammation that are the determining factors. The earlier symptoms cover a period of years, are insidious, and may be of little significance to the patient, although the enlargement may be considerable. He may be enjoying excellent health when suddenly, he is seized with acute retention or perhaps hematuria while voiding. Exposure to damp and cold weather and over-indulgence in food and alcoholic drinks not only increase the local congestion, adding to the symptoms already present, but commonly precede such an attack. On the other hand, without any of the above-mentioned provocatives, the writer has had patients who, sitting for some time in their comfortable quarters, and having a desire to urinate, but for one reason or another postponing the act, with resulting subsidence of desire, and then recurrence again and again, until finally under great pressure, they have repaired to the toilet, only to discover, to their dismay, that they were unable to void. In some of these cases, after a few catheterizations,

the added congestion, temporarily caused by this postponement, subsides, and the ability to urinate returns, and may so continue for a widely variable and unpredictable period.

In the usual case, the undue frequency, especially nocturia, while it attracts the patient's attention, does not, generally speaking, cause him to seek medical advice until there is added difficulty, such as pain, bleeding or retention. Experience shows that the vast majority of prostatitis are first seen and treated by the general practitioner and, later, drift to the clinic or office of the urologist. The history usually reveals a long-standing more or less severe train of urinary troubles, such as difficulty and slowness in starting the stream, especially on arising. The patient complains that the projectile force and volume of the stream has diminished, that after he has dressed and breakfasted he must urinate again, and that this second and subsequent urinations throughout the day are freer, more voluminous and satisfactory, and he finds it hard to account for this cycle being repeated. It interferes with his sleep and wears him out. The frequent nocturia is largely due to an increased congestion in the prostate while lying in bed. After arising and performing the morning routine, the circulation, being more active, causes a corresponding depletion of the congestion in the prostate.

Examination and Diagnosis

AFTER taking a careful history of the case, the patient is requested to pass his urine into two glasses, and is told to empty his bladder completely, taking as much time as he pleases. We note the lack or not of his ability to start voiding promptly and the character of the stream, whether full, free and continuous, or thin, forceless, dribbling or interrupted. He then lies on the examining table, and a sterile, well lubricated No. 14 or 16 French, soft rubber catheter is passed into the bladder, and the amount of residual urine determined, after which several ounces of a warm solution of permanganate of potassium, 1-8000, are in-

jected into the bladder as an antiseptic. We note with what ease or difficulty the catheter passes, and we measure the urethral length, which is often increased from the average normal of eight and one-quarter inches.

General abdominal palpation is then made for detectable abnormalities, and the reflexes are tested for possible tabes, or other central nervous diseases, causing retention. We next place the patient in the knee-chest position and make a rectal examination. The normal prostate gland is small and fairly firm to the touch, and presents no nodules, irregularities nor painful areas; whereas the enlarged gland, when due to adenoma, imparts to the examining finger the sensation of a rather smooth, elastic, tense mass, like a rubber ball filled with water. The size varies greatly, and does not always indicate the total extent of the enlargement, for this may be considerably augmented by intravesical growths not detectable by rectal examination. We must, of course, be on the alert for other pathology causing prostatic enlargement, or complicating the adenoma, such as carcinoma, tuberculosis and sarcoma. The two former impart to the examining finger a sensation of boardy hardness, and of nodular irregularity in contour. Sarcoma, which is rare, is generally found in infants, and up to the second or third decades, and imparts a rather soft, doughy sensation to the examining finger, but is not to be confused with abscess nor the marked congestive enlargement found in men who practice withdrawal and in active sexuals of the repressive type. Inflammatory thickening and hardness in an adenomatous prostate may simulate and make one suspicious of cancerous involvement; but anti-phlogistic measures and time will enable a proper evaluation to be made of this condition.

NOT infrequently we see cases of prostatic enlargement with residual urine in varying amounts, and even complete retention, who may, for a time, show an absence of inflammation, the urine being perfectly clear and on urinalysis revealing no pathological elements. The vast

majority, however, will void a urine containing from a dozen or so to hundreds of pus cells per high power field of the microscope, and perhaps red blood cells, mucus, and shreddy detritus, which means a complicating inflammation of the prostate and bladder, with seminal vesiculitis and epididymitis threatening. Diseases of the kidneys and ureters may later complicate the prostatic and bladder inflammation. A general physical examination, urinalysis, excretory urography supplemented by cystoscopy where indicated, renal functional tests, blood chemistry and typing, are invaluable as guides to treatment and prognosis.

Palliative and supportive treatment are called for in tiding the patient over a reasonable period until such time as operative intervention is permissible by his physical condition, or his acquiescence. If his condition warrants operation, procrastination only postpones the inevitable, and to his detriment. However, we all have seen the exceptions to the rule, the men who struggle along for years, catheterizing themselves. They have infected prostates and bladders, and perhaps renal involvement, which undermine their general health, and we marvel how they manage to carry on, which some of them do indefinitely.

To avoid operation, many prostatics try out various so-called cures, such as radiation, physical therapy, endocrine injections and massage, all of which are ineffectual. Vasectomy and castration have likewise proved unavailing. Leading a catheter life is not recommended, except in obviously hopeless, complicated cases, where surgery might only hasten the end; but if catheterization is impossible for one reason or another, cystostomy for permanent drainage is a justifiable procedure. In answer to the questions asked by some prospective subjects for prostatectomy, as to its effect on the sexual power, it may be stated that they will be no less potent after the operation than they were before, and that many patients affirm that their sexual power has been improved.

Operative Procedure

THERE are three kinds of operations that are performed for the relief of adenomatous enlargement of the prostate gland: perineal prostatectomy; suprapubic prostatectomy, in one or two stages; and transurethral resection of the obstructing portion of the prostate gland. Whichever method is decided on, it is advisable to perform a preliminary bilateral vasectomy as a preventive against epididymitis. While some escape this complication without having vasectomy performed, the operator will have cause to regret the omission if it should occur. Vasectomy is universally recognized as a very desirable procedure, and is practiced routinely. Transurethral resection is recommended in selected cases, where the median and lateral lobes are only moderately enlarged. Greatly enlarged prostates are best treated by either perineal or suprapubic methods of operation. In passing, it may be noted that the transurethral method is admirably adapted for the relief of vesical neck obstructions in cancer of the prostate; in contracture of the vesical neck, when not due to tuberculosis; and in some cases seemingly of neurogenic origin; also in resecting and coagulating papillary vesical tumors. The procedure is carried out through the McCarthy bakelite panendoscope under direct vision, and sections of tissue are removed from the floor and lateral aspects of the vesical neck enlargements; also from the intra-urethral intrusions of the lateral lobes in the prostatic urethra, care being taken to avoid injuring the verumontanum. The amount of tissue removed must depend on the judgment of the operator, which to him will be indicated when he sees a clear right of way during the course of the operation. All bleeding points should be controlled by the coagulating current, which is delivered by the same machine which supplies the cutting current. A foot pedal control enables the operator to shift from one to the other at will. Bleeding is freer, and not so easily controlled in the larger types of enlargement, which, as above suggested, should be removed by open operation. When sufficient tissue has been removed,

and the bleeding points controlled, a retention catheter is introduced and kept in place for three or four days, if well tolerated. The bladder is irrigated every hour or two for the first twenty-four hours, and every four to six hours thereafter. The character of the urine is noted, especially as to the presence of blood, which should not more than barely tinge the urine.

IF slight bleeding should continue, it may be controlled by injections of alum solution, two drams to the pint of warm water. Where bleeding is more active, with the formation of clots, and interferes with drainage, the catheter should be removed, the patient taken to the operating-room, the panendoscope introduced, the clots removed by suction, and the bleeding points coagulated. If the hemorrhage is of the massive type, and efforts as above suggested fail, immediate suprapubic cystotomy should be performed and the bleeding points coagulated, or the hemorrhage brought under control by packing the prostatic urethra and region of the vesical neck. Hemorrhage and infection are the main complications to be coped with in transurethral resection cases. No longer is this highly technical operation considered lightly, nor as an office procedure, as the public was led to believe in former days, for it demands the same meticulous attention, both before and at the operation itself, as well as post-operatively, as is bestowed when the radical open operation is performed. I like to have the patient in the hospital a few days before the operation, so that he may become accustomed to his environment, and have certain preoperative examinations, such as urinalysis, blood chemistry, typing, the renal functional test, and cystoscopic investigation including x-rays; and to keep him in the hospital at least a week after the operation. If all goes well, the patient is gotten out of bed on the fourth day. The bladder is then filled to the point of intolerance with warm boric solution, the catheter removed, and he voids into a receptacle held ready for the purpose. He is advised, before leaving the hospital, to be very circumspect

regarding his activities; to do little walking; to expect, in ten days or two weeks, to begin to pass the eschars from the resected areas, which may be accompanied by a little blood, at which time he must remain at home and off his feet. He is warned that when he urinates he must avoid trying to get all of the urine out of his bladder by not squeezing down at the terminal part of the act, as this encourages bleeding. Where the functional result is not satisfactory, due to insufficient tissue removal, a second resection has to be done, and there are many cases reported where a third, or even a fourth, resection was performed. Needless to say, such cases should have been prostatectomized at the outset. It is, perhaps, a matter of surprise to find, in some cases, a lack of room along the right of way, even when considerable tissue has been excised. This is understandable, when we recognize that the growth is under tension, and, as the pieces of tissue are cut away, the pent up growth rebounds, as it were, to fill the gap.

Prostatectomy

PROSTATECTOMY, either by the perineal or suprapubic route, has for its object the complete removal of the adenomatous growth, and the choice of either approach is influenced by the personal experience of the operator. Both are efficient, but the writer, having employed both methods, prefers the suprapubic route rather than the perineal, on account of the occurrence, even in expert hands, of the occasional complication of rectal fistula, or the lack of perfect control of the urine, due to injury of the external sphincter, complications that rarely occur when the suprapubic method is followed.

Suprapubic prostatectomy may be performed in one stage, upon patients who are in good physical condition with no serious renal involvement; who are relatively young, i.e., under sixty-five years of age; whose renal function and blood chemistry are normal or nearly so; and whose general make-up leads one to conclude that they will weather the storm.

Such men may be considered to be good surgical risks for the one-stage procedure; all other subjects for prostatectomy should be given the surer chance of survival by operating in two stages.

The first stage consists of suprapubic cystotomy and bilateral vasectomy, which may be performed under local novocain anesthesia, preceded by nembutal, grains one and one-half the night before, and repeated two hours previous to the time of operation. Morphine, one-quarter grain, and scopolamine, 1/300 of a grain, are injected one-half hour before starting; or nembutal the night before, and pernoston, three to five c.c., very slowly administered intravenously, fifteen minutes before the patient leaves his bed, which puts him into a sound sleep. Either of the above methods may be supplemented by gas and oxygen, if necessary. Some operators prefer spinal anesthesia. In performing the cystotomy and vasectomy operations, I employ the French technique with the Reverdin needle. The bladder incision is made four or five centimeters above the pubis, thus avoiding the space of Retzius, and minimizing possible infection. This method requires about ten minutes, and these obvious advantages to the patient make this procedure most desirable. Exploration of the bladder and prostate is carried out, and calculi, if present, removed. A right-angled, mushroom-shaped suprapubic tube, with irrigating catheter attached, is placed in the bladder for drainage purposes. The after care consists in irrigating the bladder two or three times daily, changing the dressings, and measuring the fluid intake and output. Urinary antiseptics, preferably of the sulfonamide family, as sulfathiazole, and plenty of fluids are recommended, together with sufficient nourishing food and other supportive measures.

THE time elapsing between the first and second stages must be decided by the condition of the patient. As a rule, one to two weeks are sufficient, but we see many patients, whose general physical condition has been undermined by the long-standing chronic inflammation, resi-

dual urine, and renal impairment, who should be drained suprapubically for a longer time, in order to permit recovery from these extraprostatic conditions. In such cases, experience shows that it is good practice to allow the bladder to drain for many weeks, or even months. They leave the hospital when able, and return for the second stage, when satisfactory general and local conditions warrant going ahead. Indeed, two or more months are by no means rare for giving certain old and weakened men time to recuperate. Sometimes, even a simple cystotomy results fatally, and so this first stage, often spoken of as a light operation, may prove more formidable than the prostatectomy itself.

The second stage is generally performed under spinal anesthesia. After irrigating the bladder and removing the drainage tube, the wound is dilated with the right index finger, so that it may freely enter the bladder. The left index and middle fingers are introduced into the rectum, to steady the prostate, and to coordinate with the finger of the right hand during the enucleation and subsequent packing of the prostatic cavity. The right index finger enters the prostatic urethra, breaks through the mucosa immediately to the left of the anterior commissure, and seeks the line of cleavage, which is quite easily found, the fingers in the rectum offering counter-pressure. The line of cleavage corresponds to a fibromuscular layer of tissue, lying between the adenoma and the prostate proper, sometimes mentioned as the false capsule. It contains the blood vessels. The enucleating finger is swept around the left, posterior, and right sides, until the adenoma is completely separated from the posterior lamella, which latter represents the compressed, true prostatic glands. When the mass is completely separated, there remains a pedicle of tissue, consisting of the extreme anterior portion of the prostatic urethra, where it joins the membranous urethra. It is very important that this pedicle be not torn roughly away, but gnawed through by the fingernail, just in front of the anterior extremity of the adenomatous mass. Tearing this pedicle away may also tear into the membranous

portion of the urethra, resulting in scar formation at that point, and consequent stricture. When the mass is freed, it is removed through the suprapubic wound by the fingers, aided by suitable, broad-bladed forceps. A soft rubber catheter is now passed through the urethra, into the bladder, and out of the suprapubic wound, both ends of which are loosely tied together. This is to preserve the continuity of the urethra, as, after the enucleation, there are many loose shreds of tissue, which might otherwise heal across the internal orifice and, partially or completely, block the outlet. The prostatic cavity is then packed with iodoform gauze which has been lightly washed in alum solution, two drams to a pint. The gauze strips are three inches wide, four ply, and eighteen inches long. It is well to have four such strips ready, although only two or three may be used. A piece of umbilical tape is securely tied to one end of each strip, and the tapes knotted, one knot on the first piece of packing, two knots on the second, etc., so that when the gauze is removed, the last piece shall be first, and the first last. The strips are evenly and firmly packed into the prostatic cavity, the fingers of the left hand in the rectum assisting in proper orientation. The umbilical tapes lie on the abdomen. A suprapubic tube of the de Pezzar type, with catheter attached, is placed into the bladder, and the suprapubic wound partially approximated with a few chromic interrupted sutures. The skin is likewise partially approximated with silkworm sutures; a narrow strip of iodoform gauze is loosely packed in the suprapubic wound for capillary drainage purposes. If the loss of blood is not great, transfusions are not ordinarily called for, but we habitually administer infusions of glucose solution and apply hot water bags as measures to counteract shock.

THE postoperative care is most important, and should be continually supervised by the operator, or by an experienced associate, for a successfully performed operation may result in failure by inefficient after care. Morphine should be

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THE ETIOLOGIC ROLE OF A LONG OMENTUM
AND ITS PROPER CONSIDERATION IN
ATTEMPTING TO EFFECT A CURE OF

Inguinal and Femoral Herniae
BY OPERATION

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IN considering the operative treatment of hernia, whether in textbooks or in current magazine articles, attention seems to center upon the structure of that region of the cavity wall through which the hernial mass protrudes, while hardly any mention is made of the contents of the cavity and the role which they play in the causation of hernia, primary or recurrent. The prevailing impression seems to be that hernia is due to one or a combination of the following factors:

1. Weakness of the structures of the cavity wall.
2. Abnormally large fascial apertures.
3. Defects in the wall due to
 - a Improper fetal development (patent processus vaginalis, openings in the diaphragm, etc.)
 - b Surgical incisions.
 - c Accidental wounds or infections with sloughing of tissue.
4. Increased intracavitary pressure.

Yet, supposing we had a patient whose abdominal wall was weak, abdominal rings wide, a patent processus vaginalis, and tense abdominal muscles, but had no organs inside his abdomen. Could such a patient ever have a hernia? The answer would naturally be: No. Now, instead of

supposing that the patient has no abdominal organs at all, let us say that the patient has all his abdominal organs, and add that all these various organs are attached to the abdominal parietes through short pedicles and mesenteries, and that the patient has a short omentum; and ask if such a patient could have an inguinal or femoral herniation of any organ totally enveloped by peritoneum? The answer would again be: No.

From the illustrations one can readily see the role which an unduly long omentum would play in the causation of hernia; yet, as foregone as this conclusion might seem, its implication is not easily understandable. To prove this point further, the following simple experiment was performed at the morgue. A fresh cadaver with a reducible, complete inguinal hernia was chosen for this experiment. With the hernia completely reduced, the abdomen of the cadaver was compressed manually with the result that the hernial mass reappeared in the groin and descended into the scrotum. The hernia was reduced and the procedure was repeated several times, the hernia appearing each time upon pressure. The abdomen was then opened through a lower midline in-

cision, the part of the omentum beyond the pelvic brim was trimmed off, the mesentery of the lowest loops of bowel plicated, and the abdominal incision closed. Subsequent compression of the abdomen resulted in no hernial protrusion. The result of this experiment seemed to prove conclusively an issue that had long been controversial in our conferences.

It seemed clear that while the incision of the hernial sac and the reconstruction of the abdominal wall was well in order for the radical cure of hernia, the removal of redundant omentum was an important additional step in cases where the omentum was long enough to be accessible through the neck of the sac.

ANATOMISTS describe the omentum as quite short at birth, scarcely extending down to the umbilicus, but extending down to the summit of the bladder in the adult. It hypertrophies and becomes elongated with years and is often encountered as a tremendous mass in the scrota of aged patients with complete inguinal hernia. Watson in his chapter on the etiology of inguinal hernia seems, like most other surgeons, greatly impressed by the saccular theory of the causation of hernia, and does not mention the part an unusually long omentum would play in the formation of a hernia. This omission becomes particularly striking when he quotes Raw and Murray, who have found 68 peritoneal sacs (52 femoral, 13 inguinal and 3 umbilical) in bodies of 200 people who never had any history or external evidence of hernia. The fact that Nobbe found that 35 per cent of males live and die with a patent processus vaginalis, while the incidence of inguinal hernia according to Berger is no more than 8 per cent in males, amplifies greatly the etiologic role of intra-abdominal organs.

While one cannot excise all that one finds in the hernial sac, or perhaps plicate with safety the mesentery of protruding loops of bowel, the excision of the omentum when indicated by excessive size has been harmless in our hands. A search

of the literature revealed no ill effects reported. We therefore deliver the omentum through the neck of the sac and apply traction to its free border by means of clamps. One or more hemostats are then passed through avascular areas in the omentum at its exit through the neck of the sac. A long continuous ligature is then grasped between the jaws of the hemostats and pulled through the omental apron. The ligature is cut at the sites where the clamps had been applied, and the omentum is tied off in small segments by means of the resulting smaller strands of cat-gut. The rest of the omentum is clamped beyond the ligatures to prevent return flow and the omentum is severed between the ligatures and the clamp. Once the severed stump is inspected and no bleeding seen, the ligatures are cut short and the stump is allowed to retract into the abdominal cavity. This done, the neck of the sac is transfixed and the wall is reconstructed as required.

WHILE this procedure might seem objectionable to those who are particularly conscious of the uses of "the policeman of the abdomen," enough of the omentum is usually left for it to attack offenders of the peritoneum when disposed to do so.

Because of the frequency of recurrence in those past middle age, excision of the omentum becomes particularly indicated in that age group whose herniae are, among other causes, due to omental hypertrophy, and in whom wound healing is not so rapid and union not so strong as in younger individuals.

It is true that the omentum increases in length by age, therefore its shortening at the time of operation would at least relieve the freshly repaired walls of immediate pressure, whether due to abdominal distention, vomiting or coughing during the critical period of healing, until enough union has taken place for the reconstructed wall to withstand the pressure of the lengthened omentum.

190 LINCOLN ROAD.
8000 FOURTH AVENUE.

THE SIGNIFICANCE OF

Cortical extinction

FOLLOWING CONVULSIVE SEIZURES IN THE HUMAN

An Abstract

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THE physiological phenomenon of "extinction" was discovered in 1934 by Dusser de Barenne and McCulloch. It may be defined as a diminution or absence of response observable upon repetition of stimulation of a motor focus of the central nervous system. Thus, a stimulus applied to a physiologically circumscribed region, e.g., the hand moiety of the premotor cortex in Brodmann's Area 6a α , so alters the functional condition of the cortex that when later a "test stimulus" is applied to the same region, the measured response is either diminished or completely extinguished. This effect may be observable beginning a few seconds after and lasting up to a half hour after the application of the first stimulus. Furthermore, a similar diminution or absence of response is demonstrable when the "test stimulus" is applied to other cortical regions anatomically remote from but physiologically related to the region first stimulated, e.g., the "hand areas" of the motor (Area 4) and somesthetic (Areas 3, 1, 2 and 5) strips. The following factors have been shown in laboratory animals to at-

tend extinction: 1. hypoactivity resulting in less summation; 2. positive voltage drift associated with increase in threshold of the involved neurones; and 3. acid shift (decrease of pH) leading to an increase in the threshold of all neighboring neural structures.

The present observations were originally made with the intention of seeking a method which might supplement and render more precise the data obtainable from other sources bearing on the localization of epileptogenous foci. It had been the frequent experience of the writer during the course of operations for epilepsy that, following a convulsive seizure elicited by an electrical stimulus of relatively low strength, the cortex remained for a variable period of time quite unresponsive to the reapplication of a stimulus of the same or higher value. The present inquiry was therefore undertaken in the hope that some quantitative information relative to the induced changes in threshold and in the electrical potentials of the affected cortex might be made available.

THE materials of the study consisted of seven males and three females subjected to operative procedures for paroxysmal convulsive disorders. On the basis of preliminary studies consisting of the anamnesis, the characteristic sequence

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of events in the seizure pattern, the neurologic findings, roentgenography, encephalography and electroencephalography, the site of an epileptogenous focus was postulated in each case. Under local novocain anesthesia, an osteoplastic bone flap was reflected and the exposed cortex was carefully sketched. Some seven to ten zones—each approximately equal in area to a ten-cent piece—were arbitrarily designated on the exposed cortex. Control electrographic tracings were made from each of these zones by means of a specially designed pick-up electrode feeding through an amplifier to a push-pull ink-writer and a cathode-ray oscillograph (Fig. 1).

An attempt was now made to identify more precisely the epileptogenous focus presumed to lie within the operative field. For this purpose a 60-cycle bipolar stimulating electrode was employed, starting with subliminal values of current and working up by small increments until the limen for eliciting a motor response from the excitable motor cortex of the face and/or hand area was ascertained. With this strength of stimulus, the various cortical zones were systematically explored, the intention being to discover a region from which a seizure that simulated the so-called spontaneous seizures of the patient might be produced. An interval of 10-14 sec. was allowed to elapse between successive applications of the stimulating electrodes. This permitted the effects of induction and facilitation of the previous stimulation to pass off.

A trained observer watched the patient and reported to a stenographer and to the surgeon. Whenever a seizure or other sensory or motor response was elicited, the electrical potentials were recorded from the zone stimulated until normal tracings, resembling those of the control records,

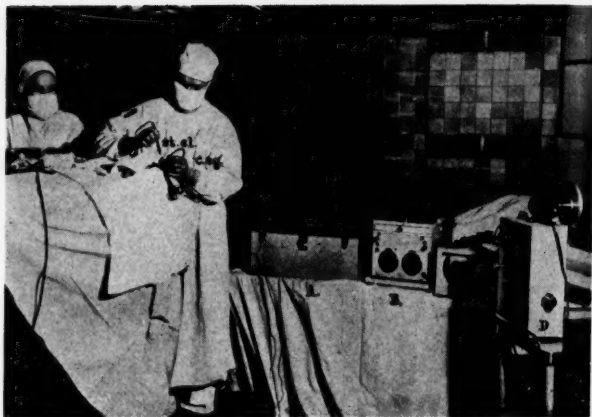


Fig. 1

Apparatus in use in the operating room. (ceg. = pickup electrodes; A = amplifier; B = ink-writing oscillograph; C = cathode ray oscillograph; D = motion picture camera; E = 60-cycle A.C. stimulator; st. el. = stimulating electrodes).

again became apparent. Meanwhile, the effect of reapplying stimuli of varying supraliminal values at regular intervals was noted.

THE essential conformity of the descriptive data derived from the ten experiments permits a treatment of the series as a whole (Table I). The abstracted protocol of the subject of Experiment IV is illustrative of the significant points. The evidence accumulated preoperatively suggested the localization of a firing point in Area 8b of the right frontal lobe. Accordingly, on November 22, 1938, a right-sided bone flap was reflected. Except for two dense, opaque, sclerotic patches, the cortex appeared normal (Fig. 2). Control electrograms were made of the various zones indicated and stimulation was begun with 0.20 mA. and 2.5 V. No responses were elicited until these values were increased to 1.0 mA. and 5.5 V. At point 1 this strength of stimulus elicited a twitching of the upper and lower lips of the left side which persisted for 55 sec. The

eyeballs went through irregular rhythmic jerks at this time. Five minutes later the same stimulus, applied to point 2, elicited twitching movements of the left forehead, cheek and eyelids and a clonus of the platysma myoides. This response lasted only 25 sec. The stimulus was now reduced to 0.45 mA and 4.0 V. At point 3, fluttering movements of the left eyelids were produced followed after 9 sec. by a few clonic jerks of the left forearm of 10 sec. duration (Fig. 3a). Stimulation of the same point at the end of two minutes resulted in only a few fluttering motions of the left eyelid. Ten minutes later the same stimulus when applied to point 4 was effective for the production of clonic twitches appearing almost simultaneously along the left upper extremity from the fingers to the shoulder. Ten minutes later, stimulation at point 5 evoked a seizure which closely simulated the patient's usual attacks. The episode lasted 2½ min. The electrogram disclosed oscillations of high frequency and large amplitude, gradually becoming iso-electric (Fig. 3b). Stimulation during the next 22 min. of the entire exposed brain was wholly ineffective with the same stimulus and with stimuli ranging up to 2.5 mA. and 10 V. The

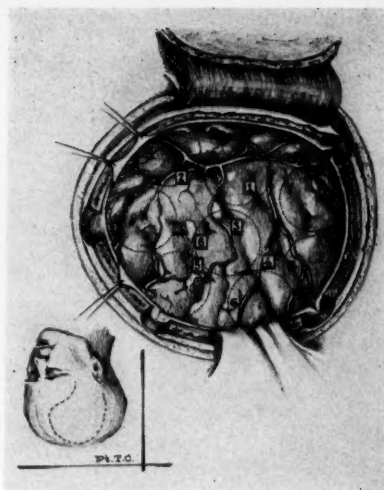


Fig. 2

The operative field of patient T.C. The numbers within the dotted circles indicate the 8 arbitrary zones from which electrograms were recorded. The 2 arrows point to small opaque cortico-arachnoid cicatrices. The numbers within the squares indicate the points from which responses described in the protocol were obtained.

TABLE I

Summary of the data derived from the cases of the present series bearing on the phenomenon of extinction and cortical iso-electricity (period of extinction includes absolute and relative phases; ineffective refers to failure to produce a major convulsion; Undet. = undetermined).

Exp't No.	Patient	Value of Stimulus Evoking Convulsion	Duration of Period of Extinction	Highest Value of Stimulus Ineffective During Extinction	Exalted State Following Extinction
I	J. C.	0.65 mA. 4.5 V.	19 min.	2.25 mA. 9.0 V.	Yes
II	W. G.	1.5 mA. 6.5 V.	11 min.	2.25 mA. 9.0 V.	Undet.
III	H. H.	1.0 mA. 5.5 V.	21 min.	2.10 mA. 8.5 V.	Undet.
	T. C.	0.45 mA. 4.0 V.	25 min.	2.5 mA. 10.0 V.	Yes
V	M. W.	0.20 mA. 2.5 V.	14 min.	2.1 mA. 8.5 V.	No
VI	P. B.	0.10 mA. 1.0 V.	21 min.	2.35 mA. 9.5 V.	Yes
VII	M. R.	1.30 mA. 6.0 V.	9 min.	2.35 mA. 9.5 V.	Undet.
VIII	A. P.	0.65 mA. 4.5 V.	17 min.	2.25 mA. 9.0 V.	No
IX	F. O.	2.25 mA. 9.0 V.	19 min.	3.25 mA. 13.0 V.	Yes
X	J. S.	1.7 mA. 7.0 V.	22 min.	2.35 mA. 9.5 V.	Undet.

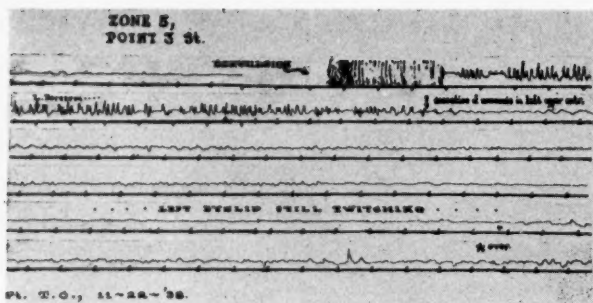


Fig. 3A

Cortical electrogram from zone 5. Stimulation at point 3 with 0.45 mA. and 4.0 V. evoked fluttering movements of left eyelids followed after 9 sec. by irregular clonic jerks of the left forearm (L. Forearm . . .). Note eyelids still twitching during a prevailing iso-electric state in this zone.

electrogram now began to show an irregular return of autonomous oscillations. Therefore, the stimulus values were reduced again to 0.45 mA. and 4.0 V. At the twenty-fifth minute, this stimulus, elsewhere ineffective, was in the process of approaching point 5. When it was applied to point 6 a severe convulsion, far more violent in the vigor and amplitude of its clinical features than the previous seizure, was evoked. Again, a period of iso-electricity supervened. It was altered at times by slow voltage drifts and after 19 min. was replaced by more nearly normal autonomous waves. At the twentieth minute following this attack, while observations of the postconvulsive period were still in process, a "spontaneous" seizure appeared which lasted 65 sec. This attack presented the same pattern as that noted previously but from the clinical standpoint it was the most severe of all. The subsequent period of iso-electricity is revealed in the electrographic tracings (Fig. 3c).

THE experiments indicate that the strength of stimulus required to evoke a major convulsive seizure by stimulation of an epileptogenous focus varies from case to case within rather wide limits

(e.g., from less than 0.10 mA. and 1.0 V. to 1.2 mA. and 9.0 V.). Further, within a given patient during the course of an operation the strength of stimulus required to evoke a major convulsive seizure by stimulation of an epileptogenous focus varies from attack to attack. This variation is in large part if not

solely ascribable to the antecedent activity of the cortex, for (a) the application of the stimulating electrodes carrying liminal and supraliminal values proved ineffective to excite a convulsion for an average of 17.8 min. after the offset of a previously elicited

Fig. 3B

Cortical electrogram from zone 3, 22 min. after response described in Fig. 3A. Stimulation at point 5 with 0.45 mA. and 4.0 V. elicited a seizure simulating the patient's usual attack. Liminal and supraliminal stimuli were ineffective during the ensuing 22 min.



attack; (b) during the advancing course of this period, motor responses of a delimited order, usually characterized by the earliest events of the spontaneous seizure pattern and resembling the auras and aborted seizures of the patient, can be elicited provided a stimulus of sufficiently high supraliminal value is employed. As the period progresses, a supraliminal stimulus of a given value elicits more and more vigorous responses, i.e., the supraliminal value required to evoke a response of a given magnitude is in inverse proportion to the time; (c) following the expiration of this period, stimuli of original liminal value are seemingly capable of eliciting a convulsive seizure of more vigorous character than that first evoked.

The period during which the convulsive responses appear to be either wholly incapable of elicitation or appreciably dampened is characterized by a relative iso-electricity of the cortical electrographic tracings. As the period progresses, the tracings indicate an irregular resumption of cortical potentials which more and more resemble those observed during the control period. The electrical excitability of the cortex is apparently recovered *pari passu* with the subsidence of the iso-electric period until it at last becomes such that a second convulsion is elicitable. The phenomena are observable as well as following "spontaneous" attacks as following electrically induced seizures. They did not correspond precisely to the period of unconsciousness and stupor following convulsions. All in all, the phenomena underlying and following upon the discharge of a convulsion appear to be qualitatively identical with those underlying other more "physiological" excitations and it thus seems unnecessary to invoke any new principles concerning the spread of excitation in seizures such as have been recently proposed on hypothetical grounds.

THE exalted state of cortical excitability which seemingly follows the period of extinction suggests a partial accounting for the clinically described "status epilepticus," viz., after a convulsion is spent there supervenes a period during

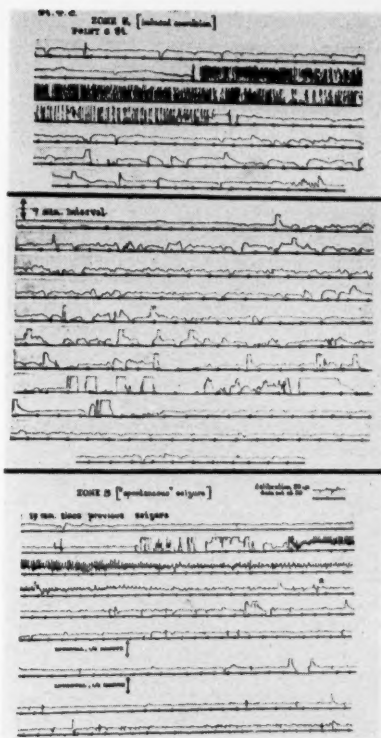


Fig. 3C

Cortical electrogram from zone 5, 25 min. after the attack described in Fig. 3B. Stimulation at point 6 with 0.45 mA. and 4.0 V. elicited a major seizure of greater severity than that previously evoked. Twenty minutes later a spontaneous seizure supervened, the most severe of all. Note prevailing iso-electric state following the latter attack.

which the cortex is unresponsive to the substrate of physiological stimuli (e.g., hypoglycemia, alkalosis, anoxia, positive water balance, endocrine factors, etc., etc.) which tend to set off a new "spontaneous" attack; as the state of cortical excitability passes from one of absolute extinction to one of relative or partial extinction a second attack (of weaker character) may be discharged, provided only that the stimuli are still "set" at a sufficiently high level; if they are not so set, they remain

incapable of discharging a new seizure until the exalted state of cortical excitability following the period of extinction is reached. The process is then repeated. According to such a concept, status epilepticus can be terminated only by one of two general mechanisms: (1) by the development of a more enduring depression of cortical excitability (e.g., "spontaneously" through repetition of the above cyclical events or by the use of drugs

and other anticonvulsant agents) and (2) by the subsidence of the tide of physiological stimuli which initiated the status epilepticus (again either spontaneously or by properly directed therapy). If these hypothetical considerations should prove defensible, the significance of the period of extinction in relation to status epilepticus may be held to account similarly for the more common parallel phenomena of a single convulsive episode.



TEMPORARY PHRENIC NERVE OPERATION FOR PULMONARY

Tuberculosis

IN NEW YORK CITY

EDWIN J. GRACE, M.D., F.A.C.S.

Brooklyn, N. Y.

WELL over a quarter of a century has passed since the first reported phrenic nerve operation for pulmonary tuberculosis. During the intervening years enough material has been compiled to evaluate such an operation.

In attempting to explain why so valuable an operation has been relatively ignored in New York City, I must comment on the work, in this field, of the outstanding pioneers who felt that in the very active cases this procedure was not helpful and in less active cases ineffective as a single procedure of therapy. In 1902, Schroeder and Green experimented in crushing or dividing the phrenic nerve in the necks of dogs to prove that paralysis

of the hemidiaphragm was not fatal and that respiration could be maintained without it. In 1911, Stuertz advocated simple division of the phrenic nerve in cases of progressive tuberculosis of the lower lobe. In 1913, Sauerbruch reported improvement in five cases following paralysis of the phrenic nerve. He advocated using phrenic paralysis for upper lobe as well as lower lobe tuberculosis. Walther, Hellin, Kroh, Felix, and Fritz noted that complete diaphragmatic paralysis did not always occur following division of the phrenic nerve. In 30 per cent of his cases—a percentage which my own experience would not place quite so high—Felix reported the existence of an accessory phrenic nerve originating below the fifth cervical nerve and running independently or with the nervus subclavius. He proposed and car-

Awarded Honorable Mention in the Competition of the Associated Physicians of Long Island for the William Browning Prize. This award was made at the Annual Meeting, January 25, 1941.

ried out phrenic avulsion to a length of 10-11 cm. However, Goetze and Felix in 1922, to obtain complete paralysis of the diaphragm, were regularly severing all phrenic roots. Friedrich in 1914 reported eight cases in which, to avoid permanent paralysis of the diaphragm, he crushed rather than divided the phrenic nerve. In 1920 and 1925, Goetze recommended temporary paralysis in certain cases. Of the two, temporary nerve paralysis by crushing is the modern trend rather than permanent paralysis by avulsion, thereby emphasizing the importance of return of function.

IN temporary paralysis, the preferred method is that of crushing or pinching the main phrenic nerve trunk and all the accessory nerve roots, with a resulting diaphragmatic paralysis which lasts about six months. However, in spite of every effort to crush the phrenic nerve with special clamps in order to have the diaphragm function at a later date, from 5 per cent to 8 per cent will be permanently paralyzed. Other methods for temporary phrenic nerve paralysis and the reason for their rejection, according to Alexander, are: (1) section and immediate suture—the return of function is uncertain; (2) intraneural injection of alcohol—brachial neuritis is caused occasionally; (3) freezing—paralysis is of only short duration, from a few days to several weeks.

Although it is difficult to evaluate temporary phrenic nerve paralysis because of varying opinions as to its usefulness and the difficulty of foretelling clinical results, it is successful in the majority of early cases as an independent operation and as an adjunct to bed rest. Alexander says that 95 per cent of initial operations in his clinic are of the temporary type; that phrenic paralysis increases the likelihood of healing and hastens it. Cutler³ agrees that the operation has value but limits its usefulness to 50 per cent in appropriate cases. On the other hand, the late Dr. Coryllos² considers phrenic nerve paralysis as an independent measure of little help in pulmonary tuberculosis. His medical associate, Dr. Orn-

stein, however, feels that in selected cases, as an adjunct to medical therapy, the phrenic nerve operation has a definite field of usefulness.

LET us consider specifically the advantages of temporary phrenic nerve paralysis as against other types of therapy. The operation itself is simpler and more economic of the patient's vitality in certain selected cases. Its six-months paralysis of the diaphragm considerably shortens the period of the patient's inactivity, compared with the three to five years required for pneumothorax. If more time is necessary for some of these selected cases, a reoperation can be performed, as often as four successive times according to Alexander. I myself have performed a reoperation two or three times on numerous occasions. (On the other hand, O'Brien³ says that the nerve is hard to find after crushing, that a recrusching may not result in satisfactory paralysis, and that the diaphragm may not rise higher or even to its former level after reoperation). To counteract this difficulty of finding the phrenic nerve for a reoperation, my own experience has shown that a special effort must be made during the original operation to avoid disturbing the phrenic nerve from its normal anatomic bed on the anterior surface of the scalenus anticus muscle where the nerve is most frequently found. My experience has also shown that diaphragmatic rest without a demonstrable evidence of elevation of the diaphragm produced, in many cases, just as good results as those instances in which rest of the diaphragm was supplemented or aided by elevation. With regeneration of the phrenic nerve, the patient regains use of the hemidiaphragm up to 90 per cent as against permanent loss of the respiratory function caused by avulsion of the phrenic nerve or partial thoracoplasty.

OF course the success of the temporary phrenic nerve operation depends more or less upon the selection of cases. The consensus of opinion is that such an operation for pulmonary tuberculosis is most

successful for unilateral minimal lesions. Alexander and O'Brien¹ recommend it for such instances as an independent operation. However, if improvement is arrested after a short time, thoracoplasty or pneumothorax is advocated as further therapy with no waiting period before the new treatment. Alexander lists the following instances when temporary phrenic nerve paralysis is desirable: (1) when lesions are unilateral and predominately productive but with neither sclerosis nor cavitation; (2) when lesions are unilateral and predominantly exudative, scattered and yet limited in total volume; (3) when lesions are unilateral and predominantly productive or exudative with soft-walled cavitation, the diameter of which is not greater than 4 cm. [Cutler limits the diameter of apical cavities to 3 cm.]; (4) in cases of bilateral disease when lesions in the more diseased lung are of any of the above types and in the less diseased lung are limited in extent, being either inactive or nearly so. Cutler³ suggests the use of phrenic nerve interruption as a step preparatory to thoracoplasty and as a preliminary to bed rest. I agree entirely with the efficacy of the phrenic nerve operation as an aid to bed rest but question its use as a step preparatory to thoracoplasty. It can also be used as an emergency measure in control of severe hemoptysis when pneumothorax is impossible and when something more than bed rest is indicated. Neuhoef and Aufses, although preferring pneumothorax as first choice in collapse therapy, recommend phrenicectomy independently (1) as an aid to bed rest, (2) for "young" thin-walled cavities, (3) for lower lobe cavities, (4) for cavities near the hilum, and (5) as a relief from pain due to diaphragmatic adhesions; they recommend it adjunctively (1) as an aid to pneumothorax, (2) as therapy to reduce lung expansion when artificial pneumothorax is to be discontinued, (3) as an aid to thoracoplasty performed for tuberculous empyema, and (4) as an aid in obliteration of an empyema cavity when pneumothorax has been discontinued. D'Abreu emphasizes the clearing up of tuberculous in-

filtration below the cavity after phrenic nerve interruption and bed rest and before thoracoplasty. In addition, he notes that a radiographically healthy base indicates the preference of the temporary phrenic nerve operation. In advocating temporary phrenic nerve paralysis, the emphasis always lies on selection of cases with minimal lesions, although, as Alexander admits, even some of these cases fail to improve without further therapy. However, I feel confident that enough time and surgical experience have been gained to support such an operation in the main.

I DELIBERATELY confine my own comments to New York City because of the great discrepancy in the use of this operation between this locality and elsewhere. No matter how tolerant one may be with the ultraconservative medical viewpoint in the modern treatment of pulmonary tuberculosis, it is glaringly apparent that this very simple and valuable procedure for temporary diaphragmatic paralysis in phrenic nerve interruption has been most lamentably ignored as a therapeutic measure in our metropolitan area.

I think that certain fundamental facts about the frequency of the operation should be considered. Since the advent of surgery as an adjunct to the treatment of pulmonary tuberculosis in municipal hospitals in New York City, only 282 phrenic nerve operations have been performed in such hospitals in this city; during the same period in Detroit, one of the pioneers, Dr. E. J. O'Brien, and his followers have done 15,000. If we consider that the population of Detroit is about one fourth that of New York City and if we accept Dr. O'Brien's surgical philosophy in his treatment of pulmonary tuberculosis, we have the appalling discrepancy of the 282 operations in New York City now, to 60,000 that should be done to equal the work in Detroit. Enough data have been compiled to state modestly that Detroit has most commendably dealt with tuberculosis as a municipal problem. No disinterested individual can look at such figures, I feel, without realizing that some fundamental in therapy

is ignored. I am willing to concede that the figure quoted for Detroit might represent a surgical extreme in dealing with pulmonary tuberculosis by means of the phrenic nerve operation, but even this concession cannot justify the correspondingly insignificant number performed in the municipal hospitals of New York City during a period of ten years.

During the early pioneering days of thoracic surgery, the ultraconservative philosophy of medical therapy played a most valuable role, but with the development of this form of surgery a very alert, progressive, dynamic and surgically-minded medical view is vital if the patient is to receive all that modern therapy has to offer. There is a danger that, if this philosophy for the tuberculous patient is not accepted by the internist, we shall see this problem treated more as a surgical disease. I personally would regret such a development but feel that the internist himself must decide.

NO one can dispute the value of pneumothorax, but I feel confident that many cases indiscriminately receive pneumothorax without full realization of the many pitfalls of such a procedure, which often falls far short of perfection and, once started, requires refills for many years with attendant dangers—dangers such as chronic empyema with unexpanded lung; inadequate collapse due to adhesions, thereby necessitating the Jacobaeus operation; and above all, the morbidity associated with the protracted inconveniences to patients. Pneumothorax, as mentioned above, requires from three to five years without re-expansion of the lung and with no absolute assurance that tuberculosis will not reoccur in the previously infected case. Dr. Paul Ringer, in a recent article on the abuse of collapse therapy, recognizes the needless dangers of using pneumothorax for minimal lesions:

"To me, collapse of the truly minimal case has never seemed justifiable. . . . Artificial pneumothorax is, technically, such a simple procedure that I fear we are apt

to lose sight of the rather radical results brought about by such a trifling operation.

"I consider that it is a radical procedure to attempt to collapse an entire lung and to keep it collapsed for from one to ten years. Moreover, whenever an artificial pneumothorax is induced the patient is exposed to the possibility of certain complications, such as spontaneous pneumothorax, pleural shock, air embolism, fluid with its countless possibilities ranging from transient appearance to a massive tuberculous empyema. . . .

" . . . in the minimal cases it is well to let nature take its course, being, of course, insistent upon a strict bed-rest regimen."

THE phrenic nerve operation in pulmonary tuberculosis should be used only as an adjunct to absolute bed rest. In some selected cases a scaleniotomy is helpful, and the buckshot bag over the affected area of lung is valuable. I feel that, in spite of the simplicity of this procedure, many lesions of pulmonary tuberculosis will respond most satisfactorily with a minimum of risk and discomfort with the patient in bed at home. Naturally, in considering a cure, I feel that the same rigid criteria should be used: The sputum should be negative; the gastric analysis, negative; the cough should be gone; and there should be x-ray and clinical evidence of cure. I have often wondered if following such a plan of phrenic nerve operation plus bed rest at home in many cases of tuberculosis—that is, with adequate public health supervision—would not give better care to the patient and substantial help to our overcrowded hospitals. In this way the incipient cases of pulmonary tuberculosis would be checked before they advanced to such a point that the patient would necessarily require hospitalization. Small efforts directed along this path might, incidentally, bring better results than the clamor for more municipal hospitals. In

recent correspondence Dr. E. J. O'Brien of Detroit specifically states:

"There can be no question concerning the merit of temporary phrenic paralysis in early minimal lesions . . . this operation is constantly being overlooked or rejected, by the majority of physicians, to the detriment of the patients. There is not a doubt that it adds materially to lung rest, and as far as I know, it has no disadvantages. . . ."

I do not feel that the above plan is under any circumstance applicable to all pulmonary tuberculosis, but I unhesitatingly state that often, in early cases of pulmonary tuberculosis with minimal lesions, the phrenic operation, bed rest, and buck-shot bag to the chest obtain very satisfactory results with a minimum of risk and discomfort. I have resorted to this procedure in well over 300 cases in the Kings County Hospital, Kingston Avenue Hospital, Saint Mary's Hospital, and The Brooklyn Hospital with satisfactory results, the majority of cases concerning persons in the second, third, and fourth decades of life. Although the operation has not been successful in all cases, I know of no operation which obtains such a maximum of rest and relaxation of the lung with such

a minimum of risk. It is true that pneumothorax will rest the lung, but it is important to appreciate the difference of rest by compression, which is the mechanism of pneumothorax, as compared with the physiological rest produced by phrenic nerve crushing.

TO sum up, I feel that in certain selected cases the advantages of the temporary phrenic nerve operation—that is, the less severe physical strain on the patient over a shorter period of time, plus the return of function of the diaphragm—outrank the claims of other forms of collapse therapy for treatment of minimal lesions in pulmonary tuberculosis; that this operation is especially good as an adjunct to bed rest; and that its advantages have apparently been disregarded in the municipal hospitals of New York City. More effort should be made, I feel, to incorporate the temporary phrenic nerve operation into the early treatment for pulmonary tuberculosis. In this way cases of pulmonary tuberculosis could be checked at a much earlier date with less danger to the patient, and the pressure on the municipal hospitals would be considerably lessened.

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CONTEMPORARY PROGRESS

The Artificial Lung in the Treatment of Upper Cervical Cord Tumors

C. VINCENT
and his associates
(*Bulletins et mé-
moires de la Société médicale des hôpitaux
de Paris*, 56: 700, Jan. 6, 1941) note that
for neurologists the chief value of the ar-
tificial lung has been in the treatment of
acute anterior poliomyelitis involving the
phrenic nerve nuclei. But at the neuro-
surgical service of the Pitié hospital the
artificial lung has also been used in the
treatment of patients with respiratory dif-
ficulties due to compression of the upper
cervical cord, and in cases of tumor exert-
ing pressure on the medulla oblongata. In
the latter type of case, the respiratory dif-
ficulty developed on the operating table;
the dressing was quickly completed, and
the patient placed in the artificial lung; in
ten to twelve hours the respiratory rhythm
became normal and the patient made a
good recovery. The authors report one
case of a spinal cord tumor involving the
second and third cervical segments. The
development of symptoms in this case had
been gradual and for some time had not
indicated the true site of the tumor. When
the patient came to operation there was
complete quadriplegia and a paralysis of
the diaphragm. Because of the marked



respiratory difficulty
and cyanosis, the
patient was placed in
the artificial lung
prior to operation;
although she had to
be removed from the
apparatus for the operation, it was carried
out under artificial respiration. The elec-
tric cutting current was used to free the
upper part of the tumor from its bed; the
latter bled freely and the coagulating cur-
rent was employed to control the bleeding.
The patient was placed in the artificial
lung immediately after operation; and re-
mained in it almost constantly for twenty
days. The paralysis of the extremities
gradually disappeared, and a few months
later she was able to walk normally. The
authors find no similar case reported; this
is apparently the first case of upper cervical
cord tumor causing paralysis of the dia-
phragm in which a cure has been obtained.

COMMENT

*We have observed several instances in
which the artificial lung could have been used
in cases where unusually highly placed cervical
lesions caused serious embarrassment to the
cord functions. The benefit of its use seems ob-
vious.*

H.R.M.

Cerebral Manifestations of Bacterial Endocarditis

E. C. TOONE, JR. (*Annals of Internal*

Medicine, 14: 1551, March 1941) reports that of 35 patients with bacterial endocarditis observed at the Hospital Division of the Medical College of Virginia in 1932 to 1938, 17 or 48.5 per cent. presented some cerebral sign of symptom, and 9, or 25 per cent., were admitted primarily as neurological, neurosurgical or mental patients. In a review of the 17 cases presenting some evidence of central nervous system damage, the author finds that the most common clinical symptoms were those of meningitis; in some cases the meningitis was present in association with other neurological conditions, such as subarachnoid hemorrhage, hemiplegia (resulting from gross arterial occlusion), hemorrhagic epididymitis and intraventricular hemorrhage. In cases of acute bacterial endocarditis the causative organism was recovered from the spinal fluid in 4 out of 6 cases in which the spinal fluid was examined; but in subacute bacterial endocarditis, the *Streptococcus viridans* was not recovered in any one of the 5 cases in which the spinal fluid was examined bacteriologically. Hemiplegia resulting from large cerebral emboli occurred in 8 cases; in 3 cases this was associated with meningitis. Subarachnoid hemorrhage occurred in 3 cases; a "fully developed psychosis" in one case; aphonia in association with hemiplegia in one case. Such symptoms as headache, auditory hallucinations, stupor, drowsiness and mental confusion were of frequent occurrence; 2 patients were unconscious on admission.

Pathologically the "fundamental" brain lesion was "a diffuse embolic meningo-encephalitis." Embolic brain lesions in bacterial endocarditis frequently produce the outstanding clinical symptoms and obscure the symptoms due to the cardiac lesion. The presence of a "sterile meningitis" in an obscure febrile illness suggests the possibility of *Streptococcus viridans* endocarditis, while the presence of the triad of clubbed fingers, splenomegaly and meningo-encephalitis is "presumptive evidence" of bacterial endocarditis, even if signs of a cardiac lesion are slight or absent.

COMMENT

The commentator has adopted the rule that in any young adult with a normal blood pressure, absence of clinical and serological evidences of lues, and also absent signs of increased intracranial pressure, the sudden development of a hemiplegia should always cast suspicion on the heart as a source of the trouble. We have observed this truth, as has the author, in cases where careful cardiac studies have failed to blame the heart.

We likewise have had 3 cases of spontaneous subarachnoid bleeding occurring in bacteremia, undoubtedly on the basis of mycotic aneurysmal defects. H.R.M.

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Lymphogranulomatosis (Hodgkin's Disease) of the Nervous System

N. W. WINKELMAN and M. T. MOORE (*Archives of Neurology and Psychiatry*, 45: 304, February 1941) note that reports in the literature indicate that involvement of the central nervous system occurs more frequently in Hodgkin's disease than is generally recognized, but there

is need for "more careful correlation between the clinical and pathological aspects" of all cases of lymphogranulomatosis, and especially of those showing evidence of central nervous system involvement. In 16 consecutive cases of Hodgkin's disease admitted to the Jewish Hospital of Philadelphia in 1912 to 1940, 10, or 62.5 per cent., showed signs and symptoms of involvement of the central nervous system; in order of frequency these signs and symptoms were: lancinating pains involving the limbs or torso, headaches, disturbances in gait, paralysis (mainly in the lower limbs), anesthetics, paresthesias, urinary incontinence, frequency of micturition, diplopia, photophobia, vertigo and mental changes; symptoms referable to the spinal roots predominated. Two of these cases are reported in detail, the first as illustrating cerebral involvement, which is of rare occurrence in Hodgkin's disease; the second, illustrating the most common localization of Hodgkin's disease within the central nervous system, i.e., in the spinal epidural space. In the first case, symptoms of neurologic origin, including sharp pains in the legs and right shoulder, headaches, photophobia, double vision and vertigo, were the first evidence of the disease at a time when there was no enlargement of the cervical or other glands. On the patient's second admission, nine months later, cervical, axillary and inguinal adenopathy was evident, and the diagnosis of Hodgkin's disease was established; the neurologic picture at this time was indicative of epidural lymphogranulomatous masses involving some of the spinal roots and part of the brachial plexus. On the last admission several months later, the symptoms and signs indicated involvement of both cerebral hemispheres. This was confirmed by the pathological findings which showed "the characteristic cellular components" of Hodgkin's disease in the dura and cerebrum. In the second case, the symptoms were typical of Hodgkin's disease; the first signs of involvement of the spinal cord developed about two years after onset of the disease; they consisted of weakness and stiffness of the lower limbs, followed by signs of a progressive transverse lesion of the cord; at autopsy an

epidural mass was found at the level of the middle thoracic region of the cord; it proved to be a typical lymphogranuloma; the spinal cord showed secondary degeneration as a result of pressure.

Chemistry of Anticonvulsant Drugs

T. J. PUTNAM and H. H. MERRITT (*Archives of Neurology and Psychiatry*, 45:505, March 1941) note that the study of epilepsy by means of electro-encephalograms has shown that the typical (grand mal) convulsions are associated with alterations in the normal rhythm of the brain potential, usually over wide areas or in multiple foci; fast high voltage waves are characteristic of the grand mal convulsions; alternations between fast and slow waves occur in petit mal seizures. Evidence indicates that such disturbances in normal cortical rhythm are dependent upon chemical alterations. It is known that convulsions can be produced by the administration of certain chemical substances, such as camphor, and also by certain "more nearly physiologic" alterations of "the chemical milieu," such as hypoglycemia, anoxia of certain types, acapnia, and the administration of ammonia or its salts—all of which affect tissue respiration. Thus it appears that at least one factor in the normal threshold against convulsions is a chemical one, and an abnormal susceptibility to convulsions results from "a chemical deficiency or abnormality," either in the plasma or in the nerve cells of the brain. The "physiologic" anticonvulsants such as dextrose, carbon dioxide, pyruvic acid and acetoacetic acid produce their effect by giving rise to "an acid milieu" in or around nerve cells. A study of synthetic anticonvulsants, which have no hypnotic or sedative activity, shows that while they represent a fairly large range of chemical structure, they are of a composition that indicates that they are readily broken down by cellular activity, possibly largely within the brain, to give rise to stable acid products such as benzoic acid. Some of the substances resulting from the breaking down of these synthetic anticonvulsants are normal constituents of the body and others are "closely allied chemically to normal endogenous products

of metabolism." Thus if the convulsions of epilepsy are considered to be due primarily to some "chemical deficiency or abnormality," as indicated above, the use of synthetic anticonvulsants in treatment may be regarded as a substitution therapy. The drug to be used should be selected on the basis of safety to life, effectiveness and relative freedom from undesirable by-effects. In all of these particulars the only one of the new synthetic anticonvulsants introduced into clinical practice—sodium diphenyl hydantoinate—has, in the authors' experience, appeared to be superior to phenobarbital.

COMMENT

There are few who are contributing more of value to the "epileptic scourge" than the above group. Studies emanating from their laboratories are invariably significant. For those wishing to obtain greater detailed information than is incorporated in the above abstract, the original article can be read with considerable profit.

The experience of the reviewer regarding the use of sodium diphenyl hydantoinate corresponds with the results obtained above. The most impressive feature is the mental alertness and improved physical vigor, which are reduced in patients using phenobarbital over long periods.

H.R.M.

Prolonged Jugular Compression; A Diagnostic Test of Neurologic Value

R. B. AIRD (*Archives of Neurology and Psychiatry*, 45:633, April 1941) reports the use of prolonged jugular compression as an aid to the diagnosis of neurologic lesions; such compression causes an exaggeration of the signs and symptoms of tumors and other space-consuming lesions of the brain and spinal cord but not in other types of lesion. The jugular compression is exerted by an ordinary sphygmomanometer cuff, folded lengthwise and wrapped about the patient's neck; a pressure of 40 mm. mercury, maintained for ten minutes, has been found to give the most satisfactory results; and is usually well tolerated by the patient. The usual neurologic examination should be made before the jugular compression is applied, and repeated during compression with special attention to the tests most likely to show changes. In 100 cases in

which this test was done, positive results were obtained in a high percentage of cases of tumor of the brain and spinal cord and in herniation of the intervertebral disk; that is, in these cases, the jugular compression caused an exaggeration of some sign or symptom already present, or developed some new sign or symptom. In cases of degenerative diseases of the central nervous system, convulsive states of unknown origin and post-traumatic syndrome, the test was negative. In many cases this test confirms the diagnosis made by other methods, but in certain cases in which the diagnosis was obscure it "contributed valuable evidence" toward making the correct diagnosis or the localization of a tumor. In cases of brain tumor, the signs most frequently exaggerated or newly elicited by jugular compression were facial paralysis (of central origin), asymmetry of deep reflexes and visual field defects; in spinal cord tumor, sensory and reflex changes were chiefly affected by the jugular compression test; and in herniation of the intervertebral disk, pain and sensory changes (reflex changes less frequently).

COMMENT

Various refinements have been added to the tests for the determination of spinal cord disease. Previous procedures have been based on readings obtained from a manometer connected with the spinal subarachnoid space, a step avoided by this new suggestion. In the older method, the actual degree of patency of the subarachnoid space is determined. In addition important studies can be made of the withdrawn cerebrospinal fluid. However, such data can be obtained after continuous jugular pressure has been tried.

Even in the Queckenstedt procedure a careful neurologic examination, performed both before and after the test, is mandatory, for it must be remembered that the information obtained simply suggests but never determines the nature of an obstructive process.

Even in carefully trained hands the usual manometric test is not without danger in high cervical compressive lesions, as there are observed and reported instances of serious disturbances of spinal cord damage occurring in cases where cerebrospinal fluid has been withdrawn. Fortunately, such experiences are rare.

The new suggestion of sustained jugular compression is simple in execution but is obviously dependent for its success on the elicitation of new signs or aggravation of old signs by a carefully trained observer.

It is in the field of cerebral diseases that this newer procedure must be approached with caution. This commentator is strongly opposed to the Queckenstedt test in any lesion above the neck as being both useless in the obtaining of information and dangerous to the patient. The proposed test has the advantage of work-

ing on a closed space, and so undoubtedly does not carry with it the same degree of danger associated with the withdrawal of cerebrospinal fluid.

We feel that the procedure has merit and recommend its trial.

H.R.M.



X-Ray Treatment of Leukemias

S. RUBENFELD and L. D. SCOTT (*Radiology*, 36:352, March 1941) reports the x-ray treatment of 117 cases of leukemia at Bellevue Hospital (New York). Of these 58 were of the lymphatic type, 58 of the myeloid type and one monocytic. In all cases weakness was the chief symptom; pain was frequently referred to the left lower quadrant due to the enlarged spleen; enlarged lymph nodes were noted in the lymphatic form; enlargement of the abdomen was due in some cases to splenomegaly, but might also be due to enlarged retro-peritoneal or mesenteric lymph nodes. In the x-ray treatment of all types of leukemia, unit doses of 150 to 200 r were given with 200 kv., filter of 0.5 to 1 mm. Cu plus 1 mm. Al, distance 40 to 50 cm. In myelogenous leukemia, the enlarged spleen and the ribs were treated, and in lymphatic leukemia, the enlarged lymph nodes and also the liver and spleen, if enlarged. Most cases of leukemia show a good response to x-ray therapy in the earlier stages of the disease; in the myelogenous type in the series reported both the total white cell count and the percentage of immature forms fell; in the lymphatic type the total white cell count fell but the percentage of lymphocytes (mostly mature forms) remained relatively high. As treatment is continued in chronic leukemia, a "refractory stage" frequently develops, when the usual method of treatment has no effect.

At this time some of the treatment factors should be changed; the filtration may be increased, the distance increased so as to include most of the trunk, and the dosage may be increased up to 300 r. Total body irradiation at 2 to 3 meters may be tried. During treatment frequent blood studies should be made, not only to determine changes in the white cell count, but also to keep track of the red cell count. If an anemia develops transfusions and iron should be employed in treatment; if the patient is debilitated by the frequent irradiations, transfusions are often the "most satisfactory tonic." When patients with leukemia have no symptoms even though the white cell count is high, it is best not to continue treatment, the authors have found; the white cell count often falls spontaneously in such patients; and by postponing treatment as long as possible the onset of the refractory stage may be delayed. The authors' results in the cases reported are similar to those obtained by others. No case has been cured, but in many cases life has been prolonged for three to six years with intervals, "however long or short," during which the patient was free from symptoms and able to carry on normal activities.

COMMENT

X-ray therapy to give relief from pain even in fatal conditions is well worth the effort. The effect on the spleen and bone marrow is an accepted fact and, though it is temporary, it makes the blood picture more satisfactory.

N.E.T.

Recovery of Carbon Monoxide Poisoned Monkeys Under X-Ray Treatment

J. A. CAMERON (*Radiology*, 36:486, Apr. 1941) reports animal experiments indicating the therapeutic value of x-rays in carbon monoxide poisoning. In three experiments, in which the control animals were killed by the exposure to carbon

monoxide, the animals treated with the x-rays recovered. In four other experiments sublethal exposures to CO were employed, and each of the four animals was used once as a test animal and once as a control, an interval of a week or more elapsing between the two parts of the experiments to permit complete recovery from the first CO exposure. In these experiments the time required by the animals to reach various stages of recovery and resume normal activity was shortened by one-half to one-third by the x-ray treatment. For the x-ray treatments in these experiments a machine operated at 140 kv was employed, with a tube current of 4 ma, target distance 10 in., delivery 130 r per minute; the monkey was placed under the tube for five to six minutes with head protected by lead.

COMMENT

As no explanation is given of the way in which the x-ray worked in hastening the recovery of these monkeys, it is difficult to comment more than to say it might possibly be of use some time when tried on humans to save life. N.E.T.

Side Effects of Short Wave Therapy and Their Prevention

H. G. BRUGSCH (*Archives of Physical Therapy*, 22:140, March 1941) reports that he has given more than 12,000 treatments by short wave diathermy in the last five years, using various wavelengths and electrodes, not including induction of artificial fever. Various side effects have been observed in persons working on short wave radio transmitters; and some physicians using short wave machines complain of headache, irritability of restlessness when in the room where the machine is operating. The author has never observed any disagreeable symptom in his experience with short wave machines. General symptoms are less likely to occur in patients, as their exposures to the short wave energy are of shorter duration. Older patients sometimes show "mild signs" of vascular collapse, such as dizziness, sweating, pallor of the skin accompanied by a fall in blood pressure and rise in pulse rate. Occasionally patients complain of excessive fatigue for the rest of the day following

a treatment. The most frequent side effect of short wave diathermy is a burn of the skin. Serious burns can and should be avoided by care in the technique and by discontinuing treatment as soon as there is "unwanted accumulation of fluid," or areas of redness or blister formation develop. Very small burns may occur even with careful technique, but they heal quickly and have no ill effect on the general well-being of the patient. The author has seen only a small number of burns in his series of cases, none serious; he attributes this to the use of air-spaced electrodes which permit strict supervision of the area treated. Small burns may also occur on the mucous membranes in treating cavities with special electrodes; the author has seen two small burns within the oral cavity, both of which healed promptly. Another side effect that should be considered is the hyperemia induced in the tissues in patients who have to undergo a surgical operation; this may result in operative and postoperative hemorrhage and difficulty in ligating blood vessels. A certain period of time should elapse between the short wave treatment and operation in surgical cases, to allow this hyperemia to subside. In the treatment of internal organs, especially the lungs, the heart and the endocrine organs, the effect of hyperemia on these organs should be carefully studied and the dosage regulated by the physician after a careful evaluation of the physical fitness of the patient.

COMMENT

The workers in short wave diathermy in this country who have studied the subject are all over-cautious in its use. It is only when imprudently large doses are given that side effects of any kind may be expected. Such doses are given in Europe but more conservative American operators do not follow this dictum.

The amount of short wave given to a patient can not be measured; therefore, the dose is entirely up to the operator and it is not to be feared that bad effects will result if the technic is good.

N.E.T.

Present Status of Ultraviolet Radiation

F. H. KRUSEN (*Archives of Physical Therapy*, 22:199, April 1941) finds that

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the evaluation of ultraviolet radiation in medicine is one of the most difficult problems; it has not yet been established what band of wavelengths have "healing power." It is known, however, that rays of wavelengths shorter than 315 millimicrons prevent and cure rickets and activate various foods and oils to give them antirachitic potency. The author's studies and the findings reported by other investigators have shown that ultraviolet irradiation has photochemical effects, activating certain substances in the skin and possibly in the blood; it also increases the active oxygen content of the lipids of the skin, increasing their bactericidal action. General exposure to ultraviolet rays results in an increase in red cells, white cells, blood platelets and hemoglobin, a decrease in coagulation time, and a decrease in hydrogen-ion concentration. It also causes a transient reduction in blood pressure. The evidence indicates that wavelengths longer than 290 millimicrons have stimulative effects on the human body; general exposures to such ultraviolet irradiation have been found to improve muscular tone, and increase the metabolism of proteins and minerals (especially calcium and phosphorus).

COMMENT

This article re-opens the subject of possible specificity of wave length in ultraviolet therapy. From a purely physiological standpoint, as the author of this article states, it would be "one of the most difficult problems" to prove that any physical energy of such weak power can cause different physiological effects practically instantaneously. Figuring that these wave lengths travel at the speed of light and vary by ten-millionths of a millimeter, it seems inconceivable that any variation in dosage will have any pronounced change or effect on physiology.

The conclusion drawn by many students of the biophysics of light is that the action of ultraviolet is practically only oxidation and the products of the skin that are oxidized are absorbed and hence enter the circulation and bring about systematic effects.

N.E.T.

The Treatment of Peripheral Vascular Disease

W. BIERMAN (*Physiotherapy Review*, 21:35, Jan.-Feb., 1941) in reviewing the

various physical methods used in the treatment of peripheral vascular disease notes that he has found determination of the changes in the temperature of the skin surface of the toe and of the calf muscles to be one of the most useful methods of evaluating the therapeutic efficiency of various techniques of treatment. In the application of heat in the treatment of peripheral vascular disease, it must be remembered that too much heat can be harmful, and that tissues can be more easily damaged in the presence of circulatory disease than when the circulation is normal. The clinician must determine "the character and the temperature of the heating measures" that give the greatest benefit in each case. The author has found that in peripheral vascular disease, in all of which the "major manifestations are present in the lower extremities," an excellent method for the application of heat is the "leg cradle" in which the heating element is a photothermal source. The temperature is thermostatically controlled and is kept at about 93°F. He has not yet determined the effect of heat applications by means of this cradle, on the temperature of the muscles of the leg. He has found, however, that following the application of heat by means of a 260-watt carbon filament lamp within a reflector, there is marked elevation of temperature in the skin, subcutaneous and muscular tissues. In those cases which can tolerate greater degrees of heat, "convulsive techniques" which elevate the temperature of the deeper tissues may be of definite value; care must be exercised in the use of such methods to avoid introducing too much heat into the diseased tissues. Rest is an important measure in the treatment of peripheral vascular diseases, for the relief of pain; however, some amount of exercise is necessary for stimulation of the circulation in many cases. Passive exercises are useful, and the Buerger postural exercises. In inflammation of the veins, elevation of the leg is indicated, and cold applications are of value for further retardation of the arterial flow in the presence of inadequate venous return. Intermittent positive and negative pressures and intermittent venous

occlusion have not proved of as much value as was expected when these measures were first introduced; the author's temperature studies have shown that intermittent venous occlusion causes a rise in skin temperature but not in the muscle temperature; this can be more simply attained by the use of the thermostatically controlled heating hood or "cradle."



The Modern Possibilities of Gonorrhea Control

R. DEAKIN and M. WORTMAN (*American Journal of Syphilis, Gonorrhea and Venereal Diseases*, 25:142, March 1941) report the results of an intensive study of gonorrhea in the male at the Washington University Clinics, St. Louis, Mo.). Up to the time when this study was begun two years ago, the facilities, methods of treatment and "lapse rate" of patients in the Clinics were much the same as in any average clinic; less than 3 per cent. of the men remained under treatment until cure was definitely established. As a result of this study, laboratory facilities for bacteriological diagnosis and check-up were improved, a special social case worker (male) was employed, a routine of treatment was adopted, and special record forms, including charts for group case recording, were developed. The routine therapy now includes three phases: (1) an active treatment period, including oral and local therapy (if local therapy is employed), with general hygienic restrictions; (2) a period during which provocative tests are carried out; (3) "a final observation period," during which the patient's activities are not restricted, but in which he returns to the clinic once a month for a

COMMENT

The writer of this article very authoritatively evaluates methods used for the treatment of peripheral vascular diseases and shows that his experience has led him to be extra-conservative. Many cases have been made much worse through over-enthusiasm in the matter of the application of heat in any form and it is the slow, gentle effect on peripheral circulation that brings about the best results.
N.E.T.

check-up before he is dismissed as cured. The provocative tests, as employed in the Washington University Clinics, cover about one month; the final observation period is one to three months. For the first 100 patients dismissed as cured under this plan of treatment, the average period of treatment and observation was five and a half months. The introduction of the sulfonamide drugs into the treatment of gonorrhea is of definite value; but in order to evaluate these drugs properly and determine the therapeutic efficiency of the various members of the group further study is needed, and this is facilitated by such methods of case holding, record and check-up as have been developed in this study. Of 474 unselected male patients with gonorrhea coming for treatment to the Washington University Clinics since this routine of therapy was adopted, only 47 (10 per cent.) have been "lost"; 62 per cent. have been discharged as cured on the basis of a minimum of four negative cultures after a period of treatment and observation "averaging well over four months;" 13 per cent. are still under treatment; in 15 per cent. the records have been closed without proof of cure, usually because of reinfection, moving out of the district, or transfer to other treatment agencies, sometimes because of lack of cooperation. As a rule the social case worker has been able to hold cases without using coercive measures.

COMMENT

Measures for the control of gonorrhea have not been productive of very favorable results in reducing the incidence of the disease. The tendency has been to care for patients during the acute phases of the disease and neglect the

more chronic phases during which time the cases are still infectious. Clinical cure is not always synonymous with bacteriological cure and the use of the sulfonamide drugs has given added significance to this fact. The methods of handling patients noted by the authors are excellent. Cultural methods to indicate cure assume a place of primary importance.

F.L.M.

Severe Pneumoconiosis Caused By Inhalation of Fuller's Earth

W. D. McNALLY and I. S. TROSTLER (*Journal of Industrial Hygiene*, 23:118, March 1941) report a study of 49 men working in a fuller's earth plant in Illinois for one-and-three-quarters to sixteen years, most of them for over eight years. Roentgenograms of the chest showed changes in the lungs graded 2 in 18 cases; changes graded 4 in 2 men who had worked in the plant for sixteen years; changes graded 3 in 8 men who had worked in the plant for four to sixteen years. In only 3 of the 49 men were the roentgenograms entirely normal. The 2 men with grade 4 roentgenological changes had been unable to work for the last two years because of marked dyspnea and weakness. There was a noticeable difference between the physical and the roentgenological findings in this series; in 37 of the 49 cases auscultation and percussion showed no abnormalities; there were 10 men who had râles; one with prolonged respiratory sound; one with impaired resonance; there were 2 with harsh breath sounds over the chest; and one with moderately impaired resonance over the open part of both sides of the chest. There were 2 with harsh mitral murmurs; 2 with systolic murmurs and 3 with evidence of myocardial damage. The roentgenological examination showed some abnormality in the heart in 19 cases, chiefly displacement to the left. One man was definitely tuberculous. The degree of physical disability was relatively greater in this group in relation to the roentgenologically visible pulmonary changes than in a group of soft coal miners recently studied. The authors conclude from this study that inhalation of fuller's earth dust can cause pneumoconiosis with symptoms similar to those of silicosis; because of the extensive

use of fuller's earth in the bleaching of fats and oils, "industrial physicians should strive to reduce to a minimum the danger of pneumoconiosis from this source."

COMMENT

The evidence presented in this article draws attention to an industrial hazard of considerable importance. The fact that one case of tuberculosis was discovered among the group studied is of little significance. Such an incidence of this disease could be reasonably expected regardless of occupation.

F.L.M.

Recent Extension of Endemic Typhus Fever in the Southern United States

H. E. MELENEY (*American Journal of Public Health*, 31:219, March 1941) presents a study of the incidence of endemic typhus in the Southern states; he finds that this disease has increased rapidly in the past decade in the southern Atlantic and Gulf States from North Carolina to Texas, and also in Tennessee; there has been a smaller increase in southern California. In all of these states except Alabama more cases of endemic typhus were reported in 1939 than in any other year previously. Endemic typhus was first discovered in the larger cities of the Southern states, and its incidence has increased in these cities, while at the same time the disease has spread to other areas, to the smaller cities, towns and rural districts. Nearly 60 per cent. of the counties in these states reported cases of endemic typhus in 1939. The "most highly endemic" areas are in southern Georgia, southeastern Alabama, and southeastern Texas. Recently Louisiana, Mississippi and Tennessee have shown an important increase in the incidence of endemic typhus. A few cases definitely identified as endemic typhus have recently been reported from West Virginia, Missouri, Oklahoma and Iowa; since Rocky Mountain spotted fever has been clearly differentiated from endemic typhus, very few cases of the latter have been reported from Virginia and Maryland. These facts indicate that endemic typhus is becoming of increasing importance as a public health problem in the United States. The only measure that will reduce the incidence and control the spread of the disease is a vigor-

ous rat eradication program. Although the Southern states offer a more favorable climate for "the breeding and spreading of rats and fleas," endemic typhus has been present to some extent in northern cities for many years, and it is evident that it can spread farther north than it has done so far. Simplified methods for rat control have been developed by the U. S. Public Health Service and State health departments (especially in Georgia) that will make it possible to carry out such programs at relatively small expense and with the willing coöperation of business establishments and house owners. "The rat has already too long been an economic burden as well as a health menace" in the United States.

COMMENT

This article presents statistical evidence supporting observations made in recent years that endemic typhus has tended to spread from certain areas on the Gulf Coast of the southern states to inland localities. The prevalence of diseases in which the rat is an important factor of transmission has not been sufficiently high to justify the expense of rat eradication measures. As a consequence such a program has been neglected by local public health authorities. The evidence presented here would seem to indicate that a change of policy is necessary.

F.L.M.

Secondary Attack Rates in Pneumonia

E. S. ROGERS and associates in the New York State Department of Health (*American Journal of Public Health*, 31:135, February 1941) report a study of secondary attack rates in 13,490 contacts in households where one person in the family had had pneumonia. This study was made in "sample areas" in all parts of New York State, but excluding the larger cities. When a case of pneumonia was reported in these areas a nurse visited the household to obtain the necessary data in regard to number of persons in the family, contact of each with the patient "and other identifying data." The household was kept under observation for twenty-eight days; if no new case of pneumonia occurred in

that period, the record was closed. There were 111 secondary cases of pneumonia in these 13,490 contacts; 85 households had one secondary, 10 households had 2 secondary cases, and 2 households, 3 each, a secondary attack rate of 8.2 per 1000 contacts. A variation in the secondary attack rate was noted at different age periods; it was highest in children under ten years of age and in adults of sixty years and over. The high rate among children cannot be attributed to the concomitant occurrence of measles and whooping cough with complicating pneumonia, as there were only 3 cases of measles and no case of whooping cough among the 54 secondary cases of pneumonia in this age group. In comparison of this secondary attack rate among household contacts with the morbidity rate of pneumonia for the state in general (excluding the cities of New York, Buffalo, Rochester, Syracuse and state institutions), it was found that the danger of pneumonia in household contacts was 37 times greater; correcting the secondary attack rate for seasonal variations, this ratio was reduced to 28:1. The study shows that the danger of contact pneumonia is greatest within the first week after the onset of the primary case, 60.4 per cent. of the contact cases occurring within this period; this "concentration of risk" in the first week is more marked among household contacts with lobar pneumonia than with bronchopneumonia. The secondary attack rates for male and female contacts were closely similar, there being a slight preponderance of males at the ages of five and fifteen years.

COMMENT

The authors do not state on what basis mean pneumonia rates for the state of New York are obtained. It would seem that reporting on this disease does not approach 100 per cent and, as a consequence, the rates noted in the State at large are too low. However, a significant difference would without doubt be observed between the attack rate among contacts and that applying to the general population. The statistical data presented emphasize the necessity for better isolation of pneumonia patients.

F.L.M.



Acute Retrobulbar Neuritis as a Manifestation of Acute Localized Tissue Anoxia

W. F. DUGGAN (*Archives of Ophthalmology*, 25:299, Feb. 1941) in a study of acute retrobulbar neuritis finds that it is due primarily to "an acute vascular catastrophe" in the optic nerve, which is characterized by arteriolar spasm and increased capillary dilatation, resulting in localized edema, tissue anoxia, and thus damage to the involved tissue. This "acute vascular catastrophe" may be induced by various etiological agents which may act on the arterioles, the capillaries, or both; in many cases the onset is related either to exposure to cold or sudden changes in the weather. On the basis of these findings, the author maintains that the treatment indicated in acute retrobulbar neuritis is the administration of vasodilators to remove the arteriolar spasm and thus relieve the tissue anoxia. In an analysis of the results of treatment of retrobulbar neuritis involving 65 eyes in 48 patients, when vasodilators were not given, but various methods of treatment were employed including nasal operations, it was found that in 41 eyes (63.1 per cent.), the final vision varied from total blindness to 20/100; the final vision in 14 eyes was from 20/30 to 20/20; 10 eyes became worse or were not improved by treatment; in 23 eyes atrophy of the optic nerve resulted with a vision of 20/200 or less in 20 eyes. In 23 patients with attacks of acute retrobulbar neuritis involving 29 eyes, vasodilators alone were used in treatment; in this group 17 eyes had a vision from perception of hand movements to 20/100 before treatment; after treatment the vision was from 20/30 to 20/15 in 25 eyes (86.2 per cent). In no instance did vision become worse after treatment,

but in 4 eyes the final vision was less than 20/200. In 2 of these cases the patient was not seen until sixty days after onset; the other 2 patients did not continue attendance at the clinic and treatment was inadequate. For the 25 eyes in which there was good response to treatment, the average duration of loss of sight prior to treatment was sixteen days, and the average time in which the best final vision was obtained was nine and seven-tenths days. Intravenous administration of sodium nitrite, intramuscular administration of acetylcholine and inhalations of amyl nitrite are all of value in the treatment of acute retrobulbar neuritis, but the author had the best results with sodium nitrate given intravenously; this assures a high concentration of the drug in the blood for a short time.

COMMENT

The reviewer believes the essayist is too dogmatic in his statement of the pathology of acute retrobulbar neuritis. It is certain that the ganglion cells of the retina are involved in certain poisons, as quinine, and ganglion cells in the optic thalamus and the cerebellum are also affected. This is no good reason for refusing to try new remedies because we have no therapy whatever for the amblyopia of multiple sclerosis and hereditary optic nerve atrophy. Whether any of the remedies used do much in toxic amblyopia is a question. The rather favorable prognosis for vision in any of these types of amblyopia without or with treatment should not be overlooked in evaluating the therapy used.

R.I.L.

Vitamin B In Ophthalmology

C. A. VEASEY, JR. (*Archives of Ophthalmology*, 25:450, March 1941) from a review of the literature concludes that subclinical deficiency of vitamin B is widespread and "may have unsuspected clinical manifestations." Persons with ocular disease whose dietary history or general symptoms suggest vitamin deficiency should be given vitamin therapy either for its specific effect or as an adjuvant to other therapy. The evidence indicates that in ophthalmology, beneficial effects from vitamin B therapy may be expected in cases of toxic amblyopia, retrobulbar neuritis, certain diseases of the cornea, Wernicke's disease and other "depletion syndromes," and possibly

in uveitis and chorioretinal involvement of unknown cause. Animal experiments indicate that cataracts develop on a diet deficient in riboflavin and can be arrested by the administration of riboflavin, but there is no evidence to indicate that riboflavin has any effect in human cataract except to arrest the swelling of the lens in intumescent senile cataract. In using vitamins in therapy, it must be remembered that nutritional deficiencies are multiple; the administration of one component of the vitamin B complex tends to deplete the supply of the others, and therefore the administration of one fraction for its specific effect should be supplemented by the administration of the whole vitamin B complex and also by an adequate supply of other vitamins, especially vitamin A. Illustrative cases are reported in which thiamine chloride was given by injection, supplemented by vitamin B complex by mouth, or the vitamin B complex alone was given. Definitely beneficial results were observed in endogenous retrobulbar neuritis, intumescent senile cataract (in relieving swelling of the lens), herpes of the lid; Bell's palsy, and phlyctenular conjunctivitis. Temporary benefit was noted in a case of tic douloureux; marked improvement in the refractive corneal condition in a case of trachoma, which, however, may have been due in part to the other vitamins given. No definite improvement was noted in a case of chronic uveitis, a case with opacities in the vitreous, or a case of keratitis, although vitamin B is reported to have been of benefit in some cases of keratitis.

COMMENT

Vitamin deficiencies are now the fad but the only way to learn what a new treatment can do is trial under careful supervision. Nothing is lost in trying the various vitamins and, in due course, the real value of the various preparations will be determined.

R.I.L.

Accidental Involvement of the Eyes in Vaccinia

A. O. PFINGST (*American Journal of Ophthalmology*, 24:257, March 1941) notes that complications involving the eye and its adnexa are the most frequent of all complications of vaccinia, yet in view of

the "vast numbers" of vaccinations performed, they are of rare occurrence, even if the incidence is higher than is indicated by reports in ophthalmological literature. In a review of ophthalmological literature for 1930 to 1938, he finds 36 cases of eye involvement in vaccinia reported in more or less detail, and others mentioned without any details; this is a relatively higher incidence than is indicated in the earlier literature. In most of the cases reported the lesions involved the eyelids, but in some instances the cornea was infiltrated; not all of these lesions followed vaccination; in some instances they were laboratory infections or were contact infections from other persons who had been vaccinated. It would seem probable that infection of the eyes might occur with considerable frequency in farmers and dairy workers handling cows with cowpox. Yet the author finds but one case in a farmer reported by Cruickshank in 1910 and another case in a milkmaid reported by Ludwig in 1935. He reports a case in a farmer, who developed burning and itching in both eyes, followed by swelling of the lids during an epidemic of cowpox among his milch cows; he had last been vaccinated successfully when twelve years old, and had not recently been in contact with anyone who had been vaccinated. He was certain that he had infected with his hands. Examination showed swelling of the eyelids of both eyes, considerable chemosis of the conjunctiva with some hemorrhagic areas, and an ulcerated area on the left upper lid; there was slight infiltration of the cornea of the right eye only. Under treatment with an antiseptic wash, cold compresses and instillation of adrenalin, the lesions cleared up except the ulcerated area on the eyelid; this was treated with the electrocautery and recovery was complete and prompt. The lesions in this case were similar to those in the case reported by Cruickshank, but in Ludwig's patient, the lesion was a typical "milkmaid's nodule" on the eyelid, which caused no pain, but some itching. In the prevention of eye complications from vaccination, the author is of the opinion that more care should be taken in regard to the protec-

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Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

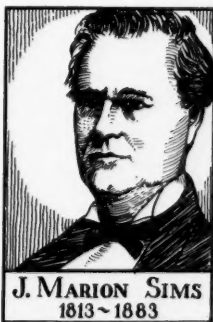
All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

A Blood Study

Hemorrhagic Diseases: Photo-Electric Study of Blood Coagulability. By Kaare K. Nygaard, M.D. St. Louis, C. V. Mosby Company, [c. 1941]. 320 pages, illustrated. 8vo. Clo.h, \$5.50.

IN this book Nygaard presents new aspects of and a new approach to the problem of the coagulability of the blood and hemorrhagic diseases. The book begins with an extensive and interesting review of various methods of determining the coagulability of the blood that have been suggested. The method used by the author is to take oxalated or preferably citrated blood and separate the plasma by sedimentation in the refrigerator. This citrated plasma is then recalcified and the changes in turbidity plotted on a graph with the aid of an instrument, the essential part of which is the photo-electric cell. Using this technic on normal plasmas Nygaard is able to gain an insight into the nature of the process of coagulation

not possible with other methods, and he applies this technic to the study of blood from patients with hemorrhagic diseases and vitamin K deficiency.



Classical Quotations

- To facilitate the exhibition of the parts, the assistant . . . introduces into the vagina the lever speculum represented in Fig. 1, and then, by lifting the perineum, stretching the sphincter, and raising up the recto-vaginal septum, it is as easy to view the whole vaginal canal as it is to examine the fauces by turning a mouth widely open, up to a strong light. J. Marion Sims.

The American Journal of the Medical Sciences. Philadelphia, 1852, New Series, Vol. XXIII.

There is no doubt that Nygaard has made a contribution to the understanding of the mechanism of blood coagulability, and the book should be studied by all hematologists and other physicians interested in this field.

A. S. WIENER

Pioneer Book on Spermatozoa

Spermatozoa and Sterility: A Clinical Manual. By Abner I. Weisman, M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 314 pages, illustrated. 8vo. Cloth, \$5.50.

THIS book is one of the first monographs devoted exclusively to the spermatozoa.

The story of the spermatozoon has been presented from its earliest

discovery by Leeuwenhoek up to the present time. The author has given in minute detail the technique for semen analysis, as

well as the various methods employed in the collection and transportation of specimens for examination. One chapter is devoted to special procedures such as testicular aspiration, and testicular biopsy in the male, and testing for spermatozoa in the vagina and cervix of the female as described by Huhner. Every procedure that is practiced today in spermatozoal study is reviewed and described fully. The author has done original work as to the effect of temperature and acids on the longevity of spermatozoa, and this work is carefully described and conclusions drawn.

Two chapters are devoted to artificial insemination and its medicolegal aspects. This book has an excellent and complete bibliography and should be a welcome addition to the library of anyone interested in sterility in all its phases, as it presents all the available information on this subject up to the present time.

PHILIP GOLDFADER

A Laboratory Manual for the General Practitioner

The Essentials of Applied Medical Laboratory Technique. Details of How to Build and Conduct an Office or Small Hospital Laboratory at Small Cost. By J. M. Feder, M.D. and John Elliott, Sc.D. Charlotte, Charlotte Medical Press. [c. 1940]. 241 pages, illustrated. 4to. Cloth, \$5.00.

THIS laboratory manual is unusual in many respects, in that it is primarily a practical volume, more for the use of the office or small hospital laboratory, and primarily written by two authors who demonstrate their ingenuity and resourcefulness in the field of construction of simple and even complex laboratory apparatus.

The practical approach of the book is all the more accentuated when one reads the first paragraph of the preface, in which the authors point out the great difference between the laboratory in the medical school and the teaching hospital and the modestly equipped little room in the small hospital or office given over to the examination of laboratory material. They

point out how difficult and bewildering the transition is from one to the other, and stress that, without the ability to extemporize, such a transition often borders on the impossible, especially if the financial angle be acute.

The arrangement of the subject matter is all that can be desired, both as to form and also as to the inclusiveness of even the most recent laboratory procedures. A particularly valuable feature is the full-page pen-and-ink sketches of the various technical procedures, as well as of the homemade laboratory apparatus. The various examinations outlined are described in as much detail as is required for a working knowledge and, as the authors remark, "an effort has been made

to get right down to the marrow of things," an objective which has been well attained.

A particularly pleasing aspect of the book is the wilful modesty of the authors throughout their presentation, but one senses that this is carried to too great an extreme when the Table of Contents of the book is saved for the last pages of the volume.

A minor criticism might be leveled at the sparsity or almost complete absence of reference articles in the text. This, perhaps, is more obvious in the case of the less frequently used tests that are given in summarized form, where the reader might welcome the opportunity for more complete information on the test in question.

The reviewer has no doubt that this book will find a useful place on the shelf of the general practitioner interested in doing his own laboratory work.

THEODORE J. CURPHEY

From Infancy to the School Age

How To Raise a Healthy Baby. Complete Information from Birth to the Sixth Year. By L. J. Halpern, M.D. New York, Prentice-Hall, Inc., [c. 1940] 388 pages, illustrated. 8vo. Cloth, \$1.95.

THIS book on "How to Raise a Healthy Baby" is written for parents. Various problems pertaining to growth and devel-

opment, diet and common contagious diseases are discussed. Questions which most parents are accustomed to ask the doctor are answered in a rather clear and concise fashion. It covers the period from birth to the 6th year.

We often wonder if these books are not somewhat confusing to many young mothers. The same advice often had better be dispensed by the doctor who understands the mother and the peculiarities of each individual child.

THURMAN B. GIVAN

Fifty Years in Practice—and Now He Has His Say

A Family Doctor's Notebook. By I. J. Wolf, M.D. New York, Fortuny's, [c. 1940]. 315 pages. 8vo. Cloth, \$2.00.

DR. WOLF was born in Stuttgart and received his preliminary and medical education in Germany. He came to America in 1888 and settled in the growing Kansas City. He must have been a good student and a good doctor. He went places. The impression he made on his new environment may be judged by the reception given him on the celebration of his 60th birthday, when his friends and patients presented him "with a Franklin automobile, a valuable diamond ring and many minor gifts in addition to a check for SIX THOUSAND FIVE HUNDRED DOLLARS". (checked and rechecked).

The book has a biographical beginning, but the doctor soon begins his discussions of the social, political and economic aspects of medicine, and does not hesitate before the broader problems of ethics, morals and religion. On the paper jacket, the reader is reminded that this is "An indispensable book for every American who consults a doctor". That's some Arbeit, even for a German. Dr. Wolf is strongly opinionated in many of his discussions and does not seem to take too kindly, at times, to contrary views. He prides himself on the generality of his ability and capability, defends and extols the general practitioner, and has his barb for the trend towards super-specialism in medicine.

After he has had his say on the many things he found, in and out of his pro-

fession, he expresses his fealty to his calling and quotes Descartes in closing, "If ever the human race is raised to its highest practicable level intellectually, morally and physically, the science of medicine will perform that service".

JOSEPH RAPHAEL

Alcoholism

The Alcohol Problem Visualised. Chicago, The National Forum, 417 S. Dearborn Street, [c. 1940]. 96 pages, illustrated. 4to. Paper, 75c.

THIS book is of value to the layman only, because it is a popular dissertation on the various phases of alcoholism and tends to show the reader the importance of moderation in the use of alcoholics.

It seems to propagate the idea of a change in legislation regarding alcoholic beverages. It advocates the Canadian and the Swedish plan of the control of hard liquors and the sale of such hard liquors through government controlled storehouses.

MORRIS ANT

New Edition of Harrow's Biochemical Text

Textbook of Biochemistry. By Benjamin Harrow, Ph.D. Second edition. Philadelphia, W. B. Saunders Company, [c. 1940]. 439 pages, illustrated. 8vo. Cloth, \$3.75.

THE second edition of this deservedly popular book contains considerable new material of interest to the physician. Of particular importance is the chapter on vitamins. At this time, when the market is flooded with various vitamin preparations, and new ones are being added daily; and when vitamin therapy is a subject of constant conversation even in polite society, it is a comfort to be able to refer to these pages and read a sane, scientific, authoritative and interesting discussion of this subject.

Sulfanilamide and sulfapyridine are briefly mentioned in the chapter on blood, and the discussion of hormones is most useful and instructive.

Besides the usual tables and graphs are several illustrations of diseased conditions in man and animals. Pictures of a baby with Xerophthalmia, of a negress with Pellagra, and of rachitic children and dogs are striking and will appeal to the clinician.

The writer's style is excellent—a feature not too prevalent in scientific textbooks.

BENJAMIN DAVIDSON

Guide on Child Problems

Growing Out of Babyhood. Problems of the Pre-school Child. By William S. Sadler, M.D. and Lena K. Sadler, M.D. New York, Funk & Wagnalls, [c. 1940]. 350 pages. 8vo. Cloth, \$2.50.

IN anticipation of the problems mothers face in rearing the pre-school child, the authors have written a handbook that answers their every question. This is a competent guide for parents, nurses, etc. in the management of small children. The physician may safely refer the mothers of his little patients to this book. There is a bibliography of supplementary reading concerning the life of the pre-school child.

STANLEY S. LAMM

Mental Treatment

The Therapy of the Neuroses and Psychoses. A Socio-Psycho-Biologic Analysis and Recynthesis. By Samuel H. Kraines, M.D. Philadelphia, Lea & Febiger, [c. 1941]. 512 pages. 8vo. Cloth, \$5.50.

THE author is to be highly commended for his comprehensive presentation of a psychiatric textbook which emphasizes therapy of various types. The facile use of English makes for economy of expression. It is apparent that an aptitude for the art of writing is happily evidenced, a characteristic all too often missing in scientific treatises.

The reviewer reacts only with praise to the practical and seasoned scientific manner in which the table of contents is interestingly presented. This includes classification of psychiatric states, fundamental psychiatry of the neuroses, psychoneurotic symptoms expressed primarily by psychological factors, and also those due to disturbance in the autonomic system. There is a concise yet comprehensive study of sex drives. The principles of psychotherapy with pertinent reference to various schools of technique is clear and helpful in gaining a working knowledge of the theory and practice thereof. Seasoned evaluation of shock therapy with reference to fever, sleep, and electrotherapy is made. There is a pithy abstract from "The Structure and Meaning of Psychoanalysis" by Healy, Bronner and Bower.

The language is adequately lucid in translating the author's well-rounded psychiatric experience into a practical textbook not only for the psychiatrist but particularly for the general practitioner or the non-psychiatric specialist who at present is attempting to diagnose and treat from one-third to three-quarters of psychiatric illnesses of varying degrees.

A foreword from the pen of the dean of American psychiatrists, Adolf Meyer, bestows propitious blessing which the reviewer feels significant as indicative of a highly deserved wide reading of this warmly welcome book.

FREDERICK L. PATRY

Goiter Prophylaxis

How to Prevent Goiter. By Israel Bram, M.D. New York, E. P. Dutton & Company, [c. 1941]. 187 pages, illustrated. 8vo. Cloth, \$2.00.

THE purpose of this book for non-medical readers is to set forth simple rules of conduct to help prevent disturbances of the thyroid gland. The early chapters described functions of the thyroid, types of disease, ideas as to etiology and endemic goiter.

The chapter on endemic goiter is written by Dr. Robert Olsen of the U. S. Public Health Service.

In the prevention of simple goiter, adjustment of mode of living, including topics of eating, working, playing, removal of infections, and sometimes small doses of iodine are the main factors discussed. Treatment of the various types is presented without much discussion of drugs as is desirable in a book of this type.

The views expressed by the author, who has had a large experience in this field, seem sensible throughout, and the book should well fulfill its purpose.

WILLIAM E. MCCOLLOM

Laboratory Chemistry

Manual of Clinical Chemistry. By Miriam Reiner, M.Sc. New York, Interscience Publishers, Inc., [c. 1941]. 12mo. Cloth, \$3.00.

THIS manual describes the most commonly used chemical tests pertaining to the practice of medicine. It contains the preparation of standard solutions, a table of blood constituents giving the

amount of blood necessary for the determination, the normal range, and the various pathological conditions where it differs. There are tests for carbohydrate, nitrogenous, and other constituents of the blood. Chapters describe tests for sulphanimide, lead, arsenic, mercury, and bar-

biturates. It also discusses urinalysis, spinal fluid, gastric, and feces analyses, kidney, and liver function tests, and vitamin determination. It is clearly written and should be a great help to anyone in the practice of medicine.

E. H. NIDISH

A Woman Doctor's Travelogue

The Doctor Takes a Holiday. An Autobiographical Fragment. By Mary McKibbin-Harper, M.D. Cedar Rapids, The Torch Press, [c. 1941]. 349 pages, illustrated. 8vo. Cloth, \$2.50.

THIS timely travelogue is significant for what the author brought to her travels. No casual tourist here! Armed with introductions, she spent enough time in each country she visited from Egypt through India, Burma, China and Japan, to create an absorbing book for both the doctor and

the layman. Although placing emphasis on sociological and medical aspects of her travel, she describes with great interest the natives' customs, religions, and superstitions, and gives insight into the political situations. The book also tells of interesting men and women doctors and others met during the tour, as well as of many amusing incidents encountered. The whole is told with the humility and sympathetic understanding of the true traveler.

CLARA S. BURN

BOOKS RECEIVED

for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

The Avitaminoses. The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By Walter H. Eddy, Ph.D. and Gilbert Daildorf, M.D. Second edition. Baltimore, Williams & Wilkins Company, [c. 1941]. 519 pages, illustrated. 8vo. Cloth, \$4.50.

Handbook of Anaesthetics. (Formerly Ross and Fairlie). Revised by R. J. Minnitt, M.D. Fifth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 364 pages, illustrated. 12mo. Cloth, \$4.00.

A Diabetic Manual for the Mutual Use of Doctor and Patient. By Elliott P. Joslin, M.D. Seventh edition. Philadelphia, Lea & Febiger, [c. 1941]. 238 pages, illustrated. 12mo. Cloth, \$2.00.

Techniques of Conception Control. By Robert L. Dickinson, M.D. and Woodbridge E. Morris, M.D. Baltimore, Williams & Wilkins Company, [c. 1941]. 56 pages, illustrated. 4to. Paper, \$5.0.

Mine Eyes Have Seen. A Woman Doctor's Saga. By Alfreda Withington, M.D. New York, E. P. Dutton & Company, [c. 1941]. 310 pages, illustrated. 8vo. Cloth, \$3.50.

Textbook of Medicine. By Various Authors. Edited by J. J. Conybeare, D. M., Oxon. Fifth edition. Baltimore, Williams & Wilkins Company, [c.

1940]. 1131 pages, illustrated. 8vo. Cloth, \$7.50.

Hutchison's Food and the Principles of Dietetics. Revised by V. H. Mottram, M. A. and George Graham, M.D. Ninth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 648 pages, illustrated. 8vo. Cloth, \$6.75.

Science and Seizures. New Light on Epilepsy and Migraine. By William G. Lennox, M.D. New York, Harper & Brothers, [c. 1941]. 258 pages. 8vo. Cloth, \$2.00.

The Doctor Takes a Holiday. An Autobiographical Fragment. By Mary McKibbin-Harper, M.D. Cedar Rapids, The Torch Press, [c. 1941]. 349 pages, illustrated. 8vo. Cloth, \$2.50.

Roentgen Interpretation. By George W. Holmes, M.D. and Howard E. Ruggles, M.D. Sixth edition. Philadelphia, Lea & Febiger, [c. 1941]. 364 pages, illustrated. 8vo. Cloth, \$5.00.

First Aid in Emergencies. By Eldridge L. Eliason, M.D. Tenth edition. Philadelphia, J. B. Lippincott Company, [c. 1941]. 260 pages, illustrated. 16mo. Cloth, \$1.75.

Natural Resistance and Clinical Medicine. By David Perla, M.D. and Jessie Marmorston, M.D. Boston, Little, Brown and Company, [c. 1941]. 1344 pages. 8vo. Cloth, \$10.00.

CONTEMPORARY PROGRESS

—Continued from page 278

tive covering of the site of vaccination and "preventive measures regarding the handling of the vaccinia vesicle."

COMMENT

This is an extremely rare complication and, if the cornea is not involved, the pustule is

easily controlled by local antiseptics. A scar cannot be avoided if the cornea is involved, which means poor vision. R.I.L.

Advances in the Use of Sulfanilamide Compounds in Ophthalmology

J. S. GUYTON and A. C. WOODS
(*American Journal of Ophthalmology*,

—Concluded on following page

CONTEMPORARY PROGRESS

—Concluded from page 283

24:428, Apr. 1941) report the use of the sulfonamide drugs in the treatment of ocular infections at the Wistar Institute of Johns Hopkins Hospital. The drugs are given by mouth in dosage sufficient to maintain an optimal concentration in the blood—6 to 11 mg. per cent. for sulfanilamide, slightly less for sulfapyridine and 3 to 9 mg. per cent. for sulfathiazole. Dosage is calculated according to the weight of the patient, the maximum being 6 gm. daily. All patients receiving these drugs must be under careful supervision; nausea and cyanosis often occur but are not indications for discontinuing therapy; such reactions as drug fever, rash, rapid drop in hemoglobin or in the white cell count, casts or red blood cells in the urine (with sulfapyridine or sulfathiazole) are indications for stopping the administration of the drug. According to the results obtained in the treatment of various ocular infections with these drugs at the Wistar Institute, sulfathiazole is the drug of choice for the treatment of gonococcal conjunctivitis; it should be continued about three days after the first negative smear. Sulfanilamide has proved effective in trachoma (given for two to three weeks) and is the

drug of choice for beta-hemolytic streptococcus infections. Sulfathiazole has been found to be more effective for staphylococcus infections and *B. coli* and related infections of the eye than either of the other two sulfonamides, but has not proved very satisfactory in any of these infections. Sulfapyridine and sulfathiazole are almost equally effective for pneumococcal infections of the eye; but sulfapyridine is more effective in Koch-Weeks (*H-influenzae*) infections. Sulfanilamide gives good results in meningococcal infections, but sulfapyridine is "probably a little better." In ocular infections of unknown etiology, the authors recommend the trial of sulfathiazole at present, as it has "the widest range of effectiveness." At the Wistar Institute, this drug has recently been given prophylactically in all cases of intra-ocular injury; although the results cannot as yet be properly evaluated, the authors are of the opinion that this practice is to be recommended.

COMMENT

We are just beginning to get definite information of this drug group. It is to be hoped that an effort will be made to learn whether these drugs will not accomplish their objects in a more reasonable dosage than is now used.

R.I.L.

THE PROSTATE GLAND

—Concluded from page 254

given in sufficient amount to calm the pain due to the operation itself, and the straining due to the presence of the catheter and the packing. The drainage should be recorded, and the bladder irrigated with warm solutions to keep it free from any blood clots. Fluids are given in generous quantities. The urethral catheter is removed in twenty-four or forty-eight hours, after cleansing the proximal end, and irrigating through it as it is withdrawn. The suprapubic tube is removed on the third day, and the suction apparatus applied. The packing should not be removed until the fifth day, the last piece that was introduced being the first to come out, identification of which is made by the knots in the umbilical tape. It should be

withdrawn most carefully and slowly, inch by inch, stopping if free bleeding occurs, and waiting for another twelve or twenty-four hours before further removal. Seldom does the bleeding amount to much, if five days are allowed to pass from the time of operation, and leaving the packing in for six to eight days does no harm. The suction apparatus is then re-applied, and the wound edges approximated by strips of adhesive plaster. The patient may be allowed to sit up on a chair, and, when the suprapubic wound is sufficiently closed, he will begin to void. The usual time spent in the hospital is from six to eight weeks, barring unforeseen complications.

The important points to keep in mind are: the pre-operative work-up; the technique in operating in this special field; the meticulous postoperative care these cases demand; and the exercise of good surgical judgment as to which type of procedure is best for the case in hand.
1 WEST 68TH STREET.

EDITORIALS



The Obsolete (?) Stethoscope

IS the stethoscope, "movie symbol of medicine," doomed to be supplanted by recording and reproducing apparatus? Shall our textbooks of diagnosis be accompanied by sound records? (One is soon to appear written by Dr. Arthur L. Smith, whose article on heart sounds appeared in our June issue).

Macfarlan thinks the stethoscope is now an unnecessary instrument and that, moreover, it reduces the efficiency of the ear, which does receive accurate, undistorted sounds from the crystal microphone.

Picture the new "movie symbol." It will be a microphonic, recording, amplifying, reproducing, loud-speaking device, broadcasting directly from the patient.

Somehow or other we have thought of the stethoscope as an immutable, unreplaceable tool, without which the patient would hardly be a patient.

Behold, there are no indispensable appurtenances or armamentaria. There may yet be a world without forceps, without

scissors, without specula, without sutures.

Fear not; it will be a world moving forward.

Source of Selectee Ills

ACCORDING to Walter West, executive secretary of the American Association of Social Workers, 45,000,000 persons in this country are underfed at this moment, and he thinks this state of affairs has much to do with the rejection on account of physical defects of "nearly half" of the men summoned for Army induction under the Selective Service Act. Defense forces, of course, can only be strengthened through the conservation of human resources, for tanks and guns and ships need a strong and healthy race to manipulate them.

Our low income families do not have the funds to buy the necessary food items required in a balanced diet.

Mr. West makes the point that any discussion of the need for better understanding of the vitamin content of certain diets must be purely academic so long

as the needy families concerned have no means to buy the necessities of life.

The nutritional situation ties up inescapably with an economic system characterized, according to accredited experts, by the freezing of credit of monopolistic capitalism, concentration of wealth in the hands of the few, exclusion of labor from a proper share in the profits, and the maintenance of property rights so absolute as to permit unbounded misuse.

The increasing desertion of the breast for the bottle during the past generation accounts in part for the greatly increased selective service rejections for bad teeth as compared with the First World War rejection rate for dental reasons. The adequate nourishment of a nursing mother is an expensive proposition, so this becomes a factor in the change from breast to bottle.

According to C. G. King, of the University of Pittsburgh, mother's milk provides an adequate amount of vitamin C, raw cow's milk falling far short of this requirement. There is a loss of from ten to twenty per cent in pasteurization, and of about fifty per cent in evaporation.

The commercial and medical worlds are completely adjusted to this violation of biologic law. Substitutes for mother's milk represent a tremendous "advance," and the pediatrician is well equipped to conduct the first line of defense necessitated by the aforesaid violation of natural law. The babies may be "kept well," but dental foundations can not be well laid down, the proof of this being today all around us.

One wonders whether the valor and toughness of the New Zealanders on the fighting fronts are correlated with the virtual enforcement of breast feeding in their country, something which dates back to the advent of the present generation. The phenomenally low infant death rate in New Zealand has also been one of the recent wonders of the world.

Perhaps the prospective recruit's mode of upbringing in this regard should be taken into account, both for statistical and military reasons.

At the Cleveland meeting of the Amer-

ican Medical Association the Committee on Foods demonstrated statistically that in the England of the Pilgrim Fathers and the early settlers of Jamestown the dietary of peasant and merchant alike included nearly five milligrams of thiamin chloride a day, the point being made that this was the best "nerve diet" in the history of the world and "largely responsible for the hardihood that enabled these pioneers to conquer an untracked wilderness."

The American dietary has undergone serious deterioration since those days.

Revival of Snuff-Taking and Prospective Blackout of the Cigarette

THE tobacco shortage in England has resulted in a resort to snuff. Tobacco trade papers expect the ancient art of sniffing snuff may yet sweep the country, 'like a dust storm across the sultry Sahara.'

The snuff-sniffing habit is encouraged by three factors: cigarettes are scarce; there are many regulations against smoking, as in airplane and munitions factories; the blackout prohibits outside lights.

Shops for the sale of snuff are increasing in number daily, with perfumed brands for the ladies.

The snuff retails at about fifty cents an ounce, and two ounces suffice for a week.

When one recalls that the use of snuff originated in Britain and was universally practiced there in the eighteenth century, its revival there is not so extraordinary.

Should we ourselves prepare seriously for or enter the war, it is interesting to speculate upon what the effect of regulation or interdiction of *smoking* would be. Cigarette smoking in public is such a matter of course today that the man in the street would be even more aggrieved by the new attack upon his "personal liberty" than he was by prohibition—originally a war measure, too—of his alcoholic beverages once upon a time. Alcoholic beverages are not drunk in the streets, nor continuously imbibed in the hectic fashion that cigarettes are smoked. A new, more cunning, and non-bulky means of boot-

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INDICATIONS FOR *Quinidine AND Digitalis*

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ON the five primary physiological properties of heart muscle, i.e., irritability, contractility, refractoriness, conductivity, and rhythmicity, digitalis and quinidine have very different effects. Also upon the extrinsic nerve control, the vagus and sympathetic, and upon metabolism of healthy heart muscle, the effects are much different.

DIGITALIS effects rhythmicity by accelerating the rhythmic formation of the impulse in muscle tissue but slows the pacemaker by stimulating the vagal center to slow the heart through the extrinsic nerve system in mildly toxic doses. It tends to depress impulse formation in the highest specialized cells of the S-A and A-V node and to cause the site of impulse formation to be moved to less differentiated tissue; also it lessens conductivity of the junctional tissues about the nodes, leading to sinus and A-V block. Carried further the toxicity is sufficient to lessen conductivity in portions of the auricular muscles, leading to the circus movement with auricular fibrillation and later to paralysis of the auricles altogether, giving rise to regular, independent nodal or ventricular rhythms of various rates.

The effect on irritability is to increase the irritability of the auricular and ven-

tricular musculature, frequently resulting in auricular and ventricular premature contractions and auricular fibrillation. The common example of over-action is digitalis coupling or bigeminy, which is a clinical sign of both supranormal recovery and increased irritability. The severely poisoned heart with either digitalis or quinidine is frequently rapid.

Conductivity is influenced mainly by delay in the A-V bundle or node. Upon auricular and ventricular muscle tissue directly conduction is apparently increased up to the point of death in the fiber.

Contractility is increased also up to the point of death to the fiber, by both increased tone of heart muscle and completeness of contraction. The heart is benefited usually through a slower rate with longer diastolic rest and by the better fixation of both glycogen and phosphocreatine.

Refractoriness is increased both by poisoning of the neuromuscular junctions and by delayed metabolism of the digitalized muscle fiber. This effect is variable in individual hearts as is the vagal action. Refractoriness is markedly accentuated where the vagus is active.

QUINIDINE effects rhythmicity by slowing the metabolism of the sites of impulse formation, first the most highly

specialized cells, and last the ventricular muscle fiber. The specialized cells resist the extreme toxic effects relatively longer, however, so that in sensitization rapid ventricular rates are induced.

Irritability of all the cardiac tissues is decreased, which accounts for the tendency to diminish premature contractions.

Conductivity is decreased without selective action in special tissues. The QRS may be slightly widened and the (R-T)-(R-R) ratios are increased with the blocking of conduction in the ventricular wall.

Contractility is decreased since quinidine is a protoplasmic poison and has no means of improving fiber metabolism.

Refractoriness is increased to a moderate degree by lessening the metabolism of the neuromuscular junction and by lessening irritability.

THE choice of drug therefore depends upon which influence one desires on the primary properties of heart muscle. In general, digitalis is the drug of choice for increasing A-V block and improving muscle metabolism, and quinidine is used to depress muscle metabolism.

Therapeutic indications for digitalis are:

1. Congestive heart failure without bradycardia.
2. Auricular fibrillation or flutter with rapid ventricular rate to increase A-V block.
3. Therapeutic test in impending failure in cardiac overstrain such as hypertension of chronic valvular disease.

Contraindications are:

1. High grade heart block with Adams-Stokes' syndrome.
2. Hypersensitivity with previous digitalis poisoning.
3. Neurocirculatory asthenia and collapse after severe infection and anesthesia.
4. To slow the heart in toxic hyperthyroidism.

Therapeutic indications for quinidine:

1. Auricular fibrillation in young hearts without congestive failure. To regularize after thyroidectomy.

2. Multiple premature contractions where hyperirritability is known and toxic factor removed.

3. Auricular flutter, immediately following digitalization.

4. Occasional paroxysmal auricular tachycardia after digitalization has failed.

5. Ventricular tachycardia.

6. In coronary thrombosis, in the hope of lessening myocardial irritability, prophylactic against ventricular tachycardia and fibrillation.

Contraindications are:

1. Congestive heart failure, since quinidine has a depressant effect on the myocardium.

2. Quinidine sensitivity.

3. In known depression of respiratory center.

INDICATIONS for simultaneous administration of digitalis and quinidine are:

Where an increase of A-V block and a depression of metabolism also are desired, such as thyroid crisis with auricular flutter or fibrillation, and rapid ventricular response with congestive failure.

Consecutive trials are frequently justified, but in all other conditions the simultaneous administration is to be avoided.

In auricular disease with circus movement digitalis is useful because it increases the A-V block and therefore preserves the ventricle; it may break up the circus movement by increasing the irritability of some fibers out of proportion to the increase of refractoriness of others, leading to a break-up of the circus movement and the dominance of sinus rhythm. Quinidine acts only by depressing the metabolism so that the circus movement is completed before refractoriness is lost and abnormal rapid pathways become impossible.

In circus movement at least, it should be clear that digitalis and quinidine exert opposite effects and tend to neutralize each other.

1220 PROFESSIONAL BUILDING.



Hypertension:

A NEW CLINICAL CONCEPT OF ITS ETIOLOGY

A Preliminary Report

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GOLDBLATT'S¹ experiments on the relation of renal ischemia to hypertension have opened the road to a better understanding of this common disorder. By the use of ingenious clamps he produced varying degrees of compression of the main renal arteries in living laboratory animals, principally dogs; this was followed by a rise in blood pressure.

Whether the hypertension is of toxic origin as in the nephritides or of hitherto unknown origin as exemplified by the term "essential", renal ischemia is the motivating force in the production of the hypertensive state. In the former type, the pathological process is a terminal one which involves the glomeruli and the tubules. In the "essential" type, the pathology is primarily mechanical and involves compression of the main renal vessels at their entrance into the kidney hilum. It is this form that has been so ably portrayed by Goldblatt.

Unfortunately however, when Goldblatt and his fellow investigators attempted to apply the result of their physiological experiments to humans, insurmountable obstacles apparently arose. To overcome this difficult situation they assumed the existence of an admittedly hypothetical

pressor substance which is supposedly elaborated by the ischemic kidney, and when liberated into the circulation produces hypertension. Irrefutable proof of such a process is lacking.

HOWEVER, like many other clinicians, I have been greatly impressed by Goldblatt's work and for several years have carefully analyzed the urologic findings in patients with hypertension. Thus far, in a series of over 160 cases of "essential" hypertension, one common, conspicuous anatomic finding was observed to which, so far, no attention has apparently been paid. In this series, excretion urography* revealed, in all cases, a kidney pelvis of the fetal type, i.e., an intrarenal pelvis which is almost completely surrounded by more or less unyielding renal tissue (Figs. 1 and 2). In such kidneys it requires very little pathology to fulfil all of Goldblatt's postulates for the production of renal ischemia and subsequent hypertension. When an intrarenal pelvis becomes obstructed at the ureteropelvic junction, which in these kidneys is within the hilum, it conceivably acts like Goldblatt's clamp

* The diodrast employed in this study was supplied by the Winthrop Chemical Co., Inc.

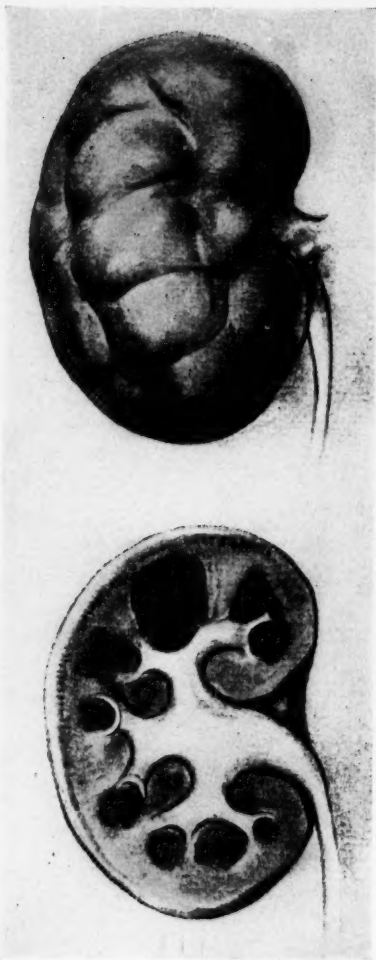


Fig. 1

Sections showing intrarenal pelvis in kidneys of a newborn. (After Papin)

and by its expanding force exerts considerable pressure on its accompanying renal vessels.

These kidneys, which are the prevailing kind in most mammals except man and pig, seem to function satisfactorily in horizontally postured animals. In upright man, too, the intrarenal pelvic type of kidney is dominant throughout fetal life and early childhood. Unfortunately, how-

ever, in a minority of adults the fetal type of kidney persists and with it the danger of compression of the renal vessels as they enter the narrow hilum. The varying degrees of mobility as a result of the uncertain support given to the kidney in erect man add still more to the stress and strain



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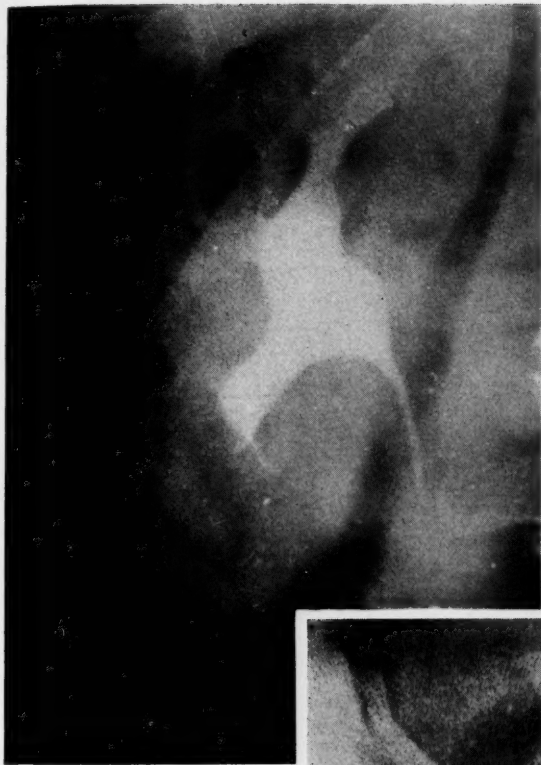


Fig. 2 (above)

Intravenous Urogram showing intrarenal pelvis associated with hypertension.

Fig. 3 (right)

Intravenous Urogram showing a normal extrarenal pelvis associated with normal blood pressure.

exerted on the renal vessels. Thus, the circulatory impairment produced by Goldblatt in his dogs can be duplicated in the atypical kidney by the mechanics of gravity. Superimposed inflammation adds to the embarrassment. In the purely "essential" type of hypertension, rest in bed, which overcomes the compressive forces, often causes a

drop in blood pressure.

Extrahilar arteries if sufficiently large may account for the failure to develop hypertension in some cases. Since the kidneys are about twenty times more vascular than any other organ (Hinman²) and during each minute take up about one-third of the average cardiac output (Smith³), any damage to the renal circulation will have a profound influence on the circulatory system as a whole. If it is true, as observed by many, that compression of the renal arteries causes hypertrophy of the arteriolar and other vessel walls outside the ischemic kidney, requiring greater pressure to force the blood through the compressed organ, then the

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Hemiplegia

OF VENOUS ORIGIN

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WHEN disorders of the brain are considered, very little attention is paid to the involvement of the venous circulation as a possible cause of the signs and symptoms produced. Even when the venous aspect is recognized, attention is directed to the large dural sinuses while the tributary cerebral veins are invariably ignored. There are numerous references to the symptoms alleged to be produced by occlusion of the superior sagittal sinus, but careful analysis reveals that the physical signs observed are not primarily produced by involvement of the sinus, but by implication of adjacent tributary cerebral veins. The clinical aspects of occlusion of the cerebral veins have been the subject of few reports, and except in two instances no attempt has been made to present a concept in which a specific clinical picture is established as the result of interference with venous circulation in the cerebral veins.

Survey of Literature

DUSCH (1) reported the occurrence of a hemiplegia in a patient suffering from thrombotic involvement of the longi-

tudinal sinus and thrombosed cortical veins. Wimmer (2) cited the production of right-sided focal signs where a thrombosis of the sagittal sinus had extended into the left superior cerebral veins. Dowman (3) published the report of a patient who had transient repeated attacks of vertigo, with gradual development of numbness over the left half of the body, beginning in the face and slowly involving the left leg. Use of the left hand was awkward. Weakness of the left hand and forearm developed; loss of joint sense in the left fingers and of position sense in the left leg with an exaggeration of the deep reflexes on the left were found. At operation the right Rolandic vein was found to be large, hard, bluish black with compensatory dilatation of neighboring veins, and with an excessive amount of fluid in the sulci. The patient recovered in 34 days. Dowman also noted the occurrence of a left hemiparesis after ligation of the Rolandic veins in the course of a transcortical approach to the third ventricle.

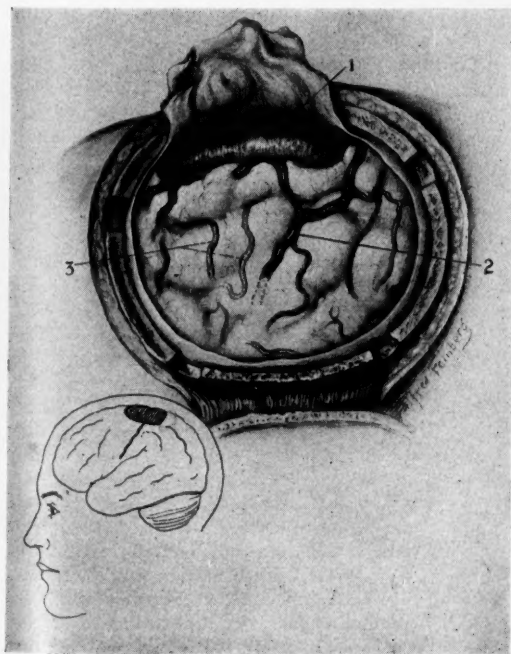
Lannois (4) depicted a syndrome of "ascending hemiplegia" characterized by hemiparesis and disturbances of gnosis

sensibilities, which, he felt, was due to thrombophlebitis of the superior longitudinal sinus.

WAGGONER (5) cited a man of 76 with a right hemiplegia, who, two weeks previously, had awakened and was unable to stand. No convulsion or loss of consciousness took place. There was no facial paralysis, no loss of speech and no loss of sphincteric control. The right leg was paralyzed and the right arm was weak. There were mild pyramidal signs on the right. Astereognosis was found in the right hand, without loss of tactile, pain or temperature sensibilities. The arm gradually regained most of its strength but he was unable to walk on the right leg. Dying from bronchopneumonia,

Fig. 1

Location of tumor—parasagittal and at paracentral lobule; 1. Bed of removed tumor; 2. Engorged and apparently thrombosed veins; 3. Arteries. Reprinted by permission of the Brooklyn Hospital Journal.



autopsy disclosed extensive thrombosis of the left Rolandic vein and a normal longitudinal sinus.

Davis (6) reported the case of a patient with a right-sided hemiplegia with astereognosis in the right hand and hypesthesia. At operation and at necropsy extensive thrombosis of the left Rolandic vein and its branches was found.

In 1915, buried unfortunately under the title of "Injuries of the Superior Longitudinal Sinus," Holmes and Sargent (7) portrayed a characteristic syndrome which they state unequivocally was caused by an involvement of the superior cerebral veins. The essential findings were a motor paralysis of unusual distribution and type, an early muscular rigidity and a disturbance of sensation essentially cortical in type. A facial paralysis was uncommon and at the most transient, while speech was rarely and but briefly affected.

RECENTLY three cases illustrating the cardinal findings found by Holmes and Sargent were reported (8). These cases, briefly abstracted, are as follows.

Case 1 In a left-handed female aged 50, who had normal preoperative physical findings and who suffered from convulsive seizures of two years duration, a parasagittal meningioma was removed from the left posterior parietal area. The tumor was easily accessible and was removed with minimal trauma to the adjacent cortex, without interference with the arterial supply. It was necessary to occlude several large veins, adjacent to the tumor, and emptying into the sagittal sinus.

On the same day following the operation there was a flaccid paralysis of the right arm and leg. No facial paralysis or disturbance of speech was noted. The following day movements of the fingers of the right hand occurred. The third day a good grip in the right hand with slight movement at the right el-

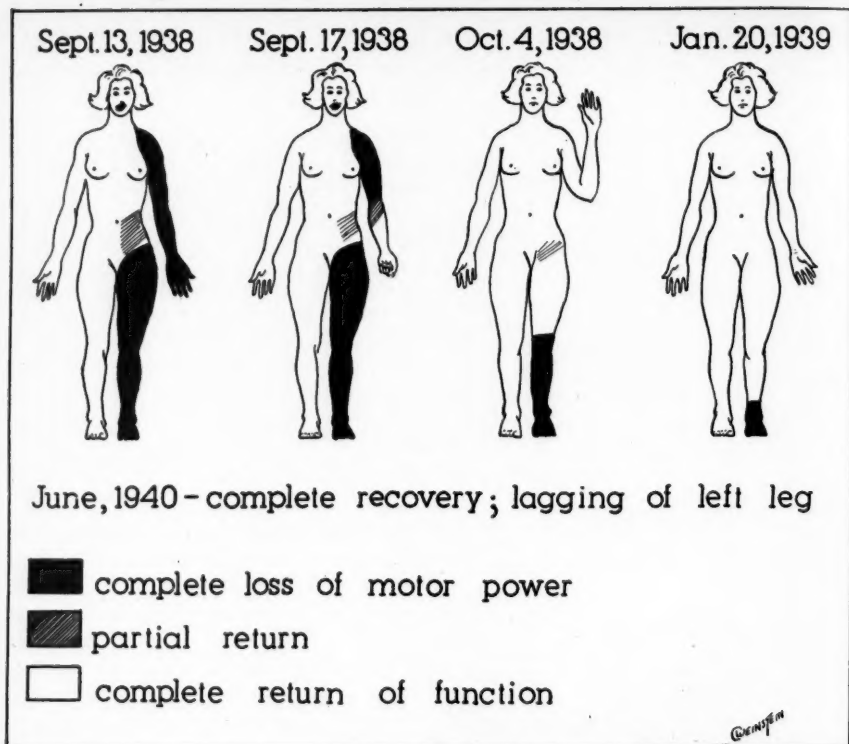


Fig II

bow was found. Astereognosis was noted in the right hand. There was "plastic" hypertonicity" in the right upper extremity when moved passively. On the eighth day weak movements returned to the right shoulder and hip. Appreciation of vibration and the two point test were impaired in the right hand. Muscle, joint and tendon sense was disturbed in the right toes. Pain sensibility was slightly diminished. By the twenty-fifth day there was a complete return of motor function except for diminution of movements of the right toes.

Case 2 Female, aged 54, with a story of convulsive seizures for ten years, and dragging of the right leg for ten years, developed a right hemiparesis char-

acterized by preservation of finger movements and grip, and absence of movements at the right elbow, shoulder and lower extremity. Marked plastic hypertonicity of the right extremities was observed. On the right there was found a mild sensory diminution to all modalities of sensation but chiefly the discriminative types. There was no facial paralysis and no defect in speech, despite a story of obvious right-handedness. A preoperative diagnosis was made of a left parasagittal meningioma and venous thrombosis of the left superior cerebral rolandic veins. The preoperative diagnosis of neoplasm as well as preexisting thrombosis of the cerebral veins was confirmed (Fig. I). A complete right hemiplegia except for face and speech was noted after operation. There oc-

9
curred a progressive recovery of motor function following the cellular pattern of the rolandic strip.

Case 3 A woman of 62 presented clinical signs of a "sensory hemiplegia" of progressive development. Motor power was excellent and there were no clinical signs of intracranial hypertension. Diagnostic air studies indicated a neoplasm in the posterior aspect of the right cerebrum. Following operation a left-sided motor paralysis was found. The fashion of recovery again followed the motor pattern of the rolandic strip, beginning in the fingers and hand, and spreading in sequence to the elbow, shoulder and down the leg. The foot improved last.

THE following *CASE REPORT* illustrates the principles so clearly outlined first by Holmes and Sargent.

B. L., a white female, aged 32, entered the Neurological Service of the Kings County Hospital on September 14, 1938, because of inability to move the left arm and leg. Six years previously there had occurred attacks of involuntary swaying of the body from side to side, described as a peculiar off-balance feeling. Each attack lasted about two minutes and occurred about once in five months. No headache, vertigo or vomiting were experienced. On one occasion marked momentary unsteadiness was noticed on trying to walk.

The day prior to admission while working about the house there occurred an unusually severe swaying attack unaccompanied by dizziness or faintness. Because of weakness she was helped to bed and a few minutes later noticed the left lower extremity could not be moved. Several hours later the left upper extremity became powerless also. Soon after the onset of paralysis in the left foot and leg a feeling of numbness was felt on the left side of the face and occasional pins and needles sensation in the left upper and lower extremities. The following day the fingers of the left hand could be flexed and extended but there was no other movement throughout the left-sided extremities. The movements of the fingers

again disappeared within the course of the day. There were no disturbances of speech or the sphincters. The patient was right-handed and of right-handed stock.

PAST History: The patient has always been healthy and vigorous except for two "nervous breakdowns".

Physical examination: The patient was cooperative, intelligent and mentally clear. Speech was normal. Pupils were equal and reacted well to light and accommodation. Optic fundi were normal. A very mild left supranuclear facial paralysis was present. The left extremities could not be moved, and the left shoulder could not be shrugged. The tongue protruded to the left. Severe plastic hypertonus was observed on passive flexion and extension of the left arm, which was held adducted to the trunk. The left elbow was slightly flexed, the forearm pronated, the wrist and fingers of the left hand flexed. The left lower extremity was extended and externally rotated. An increase of tone of the plastic type on both flexion and extension was also noticed in the left lower extremity.

The deep reflexes were hyperactive throughout, much more on the left side; a left Babinski toe sign and Hoffmann's sign were present. Neither abdominal reflex was elicited. On the right the heel to knee test showed moderate ataxia with the eyes closed. Cotton touch and pin prick appeared intact. Vibration was moderately impaired in all extremities, more so in the right upper extremity. Two point discrimination was impaired in the upper extremities.

Three days later it was noticed that the patient again could move the left fingers well and make a good fist on the left. Movements about the left elbow were weak. There was no movement at the left shoulder. Marked spasticity persisted, more pronounced in the left lower extremity. Pin prick was slightly diminished below the second cervical segment; however, this was very variable.

ON September 26th, ten days later, there was no left facial weakness. There was no movement at the left shoulder.

The patient was able to pronate and supinate the left forearm. Power in the left wrist was good and grip was excellent. Marked spasticity still existed. On October 4th, eighteen days later, it was found that the left shoulder could be shrugged. Vibratory sense was lost in the left lower extremity to the C-256 tuning fork, diminished to C-128 in the right lower extremity. Errors were made in appreciation of postural sensibility in the right and left sides. There was a return of movement about the left hip but no movements were present at the knee, or in the foot or toes in the left lower extremity. The patient subsequently improved, was able to get around with help, and left the hospital against advice.

Blood pressure was 128/80. Temperature 100°, pulse 84 and regular. The heart and lungs were negative. The blood chemistry showed normal findings. A spinal tap on the second day of her admission disclosed a deeply xanthochromic cerebrospinal fluid with Pandy 2, 500 red blood cells per cubic mm., under 8 mm. of mercury pressure. When repeated several days later, the same degree of xanthochromia with red blood cells was present. The Wassermann reaction in the blood and cerebrospinal fluid was negative.

An examination of the skull by x-ray revealed no evidence of fracture of the cranial vault or of increased intracranial pressure. The cervical spine showed no irregularity of outline of the bodies of the cervical vertebrae.

JANUARY 20, 1939 the patient, examined at home, was able to walk but dragged the left foot. The deep reflexes were hyperactive. Muscle power was good in all extremities, except for plantar and dorsal flexion of the left foot. Muscle tone was normal. Vibratory and position sense was disturbed in the right foot. Two

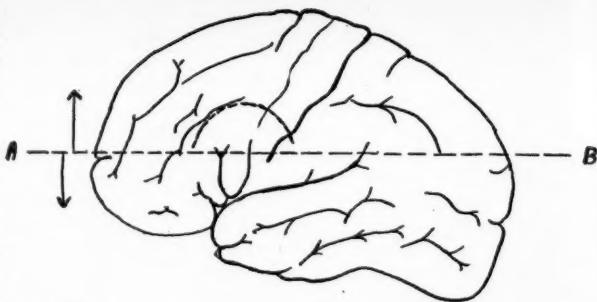


Fig. III

Rough sketch to show approximate area of external brain surface drainage by the superior cerebral veins above line A-B, and the sylvian system below line A-B. Arrows indicate direction of venous current in relation to line A-B, drawn through tip of Sylvian fissure.

point discrimination was good in the left, but disturbed in the right hand. Qualities of texture and degrees of wetness could not be differentiated with the right hand.

When examined on January 6th, 1941, patient stated "On returning home from the hospital I suffered from severe daily headaches for a while. I still have headaches. On one occasion I had a bad spell of dizziness and vomiting with the headache which lasted for 24 hours. My left foot is bad. I always trip and stumble. "I still have numbness in my right hand. I have a bad headache today."

On physical examination awkwardness in the left hand and a spastic drag of the left leg still persisted. There was full appreciation of the movements of the toes and fingers.

Progress of motor recovery shown in accompanying illustration (Fig. II).

Discussion

THE clinical signs produced by interference with drainage of the superior cerebral rolandic veins are dependent upon the cellular somatic representation in the rolandic motor strip and the mode of drainage of the cortex. The Sylvian middle cerebral vein serves as the chief

egress for the centers controlling the hand and face—while the cortical centers for the elbow, shoulder, trunk, hip, knee and foot are drained by the superior cerebral veins. The lower group, the sylvian system, flows into the cavernous sinus, while the superior cerebral veins course upward to the superior sagittal sinus.

There is an intimate and elaborate collateral circulation between the veins composing the superior cerebral group, as well as the sylvian system.

Reference to the accompanying diagrammatic sketch (Fig. III) shows that in reference to a horizontal line drawn at the level of the tip of the sylvian fissure, the flow of blood above the line is toward the sagittal sinus while below this line the flow is downward through the middle cerebral vein (sylvian vein). An area of no man's land, indicated by the circular broken line, represents a point drained essentially by the inferior sylvian system, but contributed to somewhat by the superior system.

There also exists a connection between the two groups by means of the anastomotic vein of Trolard.

THE freedom of anastomosis undoubtedly serves as a sponge to counteract a block at any point in the system. The efficacy of the well-knitted collateral circulation determines the response to an occlusion. An interference with drainage in the superior veins as they are about to enter the sagittal sinus is immediately reflected in the surrounding web-like venous channels, which if adequate, as is probably very often the case, may result in an asymptomatic occlusion. When a stasis occurs, it is reflected by a damming up into the most minute venous pathways. The cortical gray matter and underlying white matter are affected. The function of the cortical cells is disturbed, producing both pre-rolandic and postrolandic signs and symptoms.

Temporarily there may be an overflow into the sylvian system affecting the hand, accounting for an early paralysis of the hand, which rapidly recovers its functions as soon as the sylvian system can carry

the extra burden. The functions of the elbow, shoulder, trunk, hip, arm and leg are lost, recovering in this order. The essentially gnostic sensory disturbances which are found are attributed to the same interference with venous flow in the cerebral veins.

Evidence of previous bleeding or fresh bleeding in the cerebrospinal fluid is a fairly frequent finding in proven acute interruption of the venous circulation in the longitudinal sinus or in its tributary veins. The xanthochromic tinge to the cerebrospinal fluid observed in this case was probably due to extravasation of blood in the subarachnoid space as the result of venous thrombosis. Dusch (1861) quoted a case of thrombosis of the longitudinal sinus which at autopsy revealed changes in the sinus, and reported that "the whole of the pia mater on the surface of the brain and between its convolutions is replete with blood, and in some places, especially on the right sylvian fissure, more considerable extravasations exist." Irish [1938] (9) likewise noted extensive subarachnoid bleeding in one instance of cerebral venous thrombosis. Large subarachnoid hemorrhages and hemorrhagic foci of necrosis in the cerebrum were almost invariably accompanied by thrombosed veins in the observations of Byers and Hass [1933]. (10).

THE paralysis of the left leg and arm developed rapidly in a few hours from the leg to the arm. Speech was not affected and just a mild left facial weakness of brief duration was detected. The hemiplegia was not accompanied by shock, the patient being alert, bright, uncomplaining, and creating an actual impression of complete well being. In the very early stages plastic rigidity of the paralyzed left arm and leg was so extreme as to be remarked upon by all examiners. The deep reflexes were likewise unusually brisk when first examined.

The outstanding clinical observation was the early appearance of power in the left fingers and wrist while movements were still lost at the left elbow and shoulder. Slowly the improvement extended to the

Table I

Representing a comparison of the contrasting findings in the common capsular hemiplegia caused by arterial involvement and a hemiplegia caused by occlusion of the rolandic veins

<i>Arterial (capsular)</i>	<i>Venous (cortical)</i>
1. Onset extremely sudden in most instances.	Not necessarily a precipitate onset.
2. States of shock frequently present. Story obtained from others.	Complete absence of shock. Patient able to give own story.
3. Consciousness is often lost; sensorium clouded.	Cooperation excellent. Patient mentally alert.
4. Appearance of illness.	Appearance of good health.
5. Marked supranuclear facial paralysis.	No facial paralysis or very transient.
6. Speech dysarthric or "aphasic."	No disturbance of speech.
7. Flaccidity of muscles on paralyzed side for ten to twelve days. Face, arm, particularly the hand, very much more paralyzed than the leg.	Immediate or early rigidity of the muscles. Foot involved most severely.
8. Muscle tone, flaccid early, becomes spastic in spite of good muscular power.	Muscle tone spastic at onset. Becomes less rigid as recovery takes place.
9. Absence of deep reflexes in early states.	Hyperreflexia immediate or early.
10. If sensation is found disturbed, pain sensibility more involved although all modalities may be lost.	Gnostic or cortical type of sensory loss.
11. Recovery of muscle power usually takes place first in the lower extremity. The finger movements recover late or not at all.	Characteristic mode of recovery. In the upper extremity the hand, elbow, and shoulder in this order, while in the lower the hip, knee and lastly the foot.
12. Steady progressive recovery.	Marked fluctuation in the motor power during recovery, varying from good power to complete absence of function and again a return in short periods of time.

elbow and shoulder and gradually movements at the hip returned. At this time no movements were possible in the left knee, ankle and toes.

The fluctuation in motor power which we have found to be a striking feature of this syndrome was shown in the complete absence of movement in the left hand, its subsequent return for a brief period and its disappearance in the course of the same day. Power in the left hand did not again return until three days later.

There were vague and shifting sensory findings noted during the course in the hospital. Later a disturbance of sensation of a pure cortical type was found in the right hand in that finer degrees of texture and also degrees of wetness and dryness could not be differentiated, pointing to implication of the sensory cortex in the left hemisphere. This later finding suggests that there had been extension of the thrombosis of a milder degree to one of the left cerebral veins, probably originating primarily at the superior longitudinal sinus.

THE diagnosis in this case is not proven. However, the observed bilateral defects suggest that the basic cause probably involved the superior longitudinal sinus with resulting bilateral inter-

ference with the venous flow in the superior cerebral veins. Since discharge from the hospital the physical findings remain relatively unchanged. An important new development has been the complaint of severe frequent headaches. Up to the present time the patient has refused to return to the hospital for pneumographic studies to determine the possibility of an implication of the longitudinal sinus by a parasagittal meningioma.

A tabular comparison between the findings observed in a capsular hemiplegia on the one hand and a hemiplegia produced by interference with the venous drainage in the superior cerebral veins may be represented as shown in Table I.

IN addition to the above findings an important difference not previously stressed is found in the fashion of motor recovery. As is well known, the recovery of function in the usual arterial or capsular hemiplegia is one of a steady progressive nature without remissions. In startling contrast, in the hemiplegia of venous origin there are found rapid fluctuations in the early stages of recovery. The return of function discovered at one examination may have completely disappeared when the patient is again examined a half hour or several hours later. This

finding was noted in the published cases (8), but having been found by different examiners some question was placed on the observations. It is a characteristic finding and at times is noted by the patient, or nurse in charge, when not observed on medical rounds by the physician.

Summary

A CASE report has been presented to illustrate the findings of a venous hemiplegia. Brief abstracts of three other

cases, previously reported, are given. The essential findings of hemiplegia of venous origin are early plastic rigidity, a paralysis most marked in the lower extremity, frequently sparing the face and hand, and a specific fashion of recovery advancing from hand to foot.

There is offered a tabular contrast of the essential characteristics between a hemiplegia of capsular or arterial origin and one of venous or surface origin.

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30 EIGHTH AVENUE.



HYPERTENSION

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modus operandi of the rise in blood pressure in these cases may be more or less wholly mechanical. The ballooning out of the intrarenal pelvis by an obstructive lesion or by infection at the ureteropelvic junction results in pressure on the neighboring renal vessels. Such a process is primarily involved in the etiology of this type of hypertension.

EXCRETION urography in patients with renal pathology unassociated with hypertension usually disclosed the normal adult type of human pelvis, i.e., an extrarenal pelvis (Fig. 3). When obstruction occurs in these cases the hump of the pelvis which is outside the renal tissue, together with the ureter, acts as a cushion or shock absorber and shields the renal cortex and blood supply from excessive pressure. This accounts for the numerous cases of pyelonephritis, hydronephrosis, pyonephrosis, nephrolithiasis and obstructing calculi which are not accompanied by hypertension even in the late stages requiring nephrectomy.

The back pressure is exerted principally on the free, unsupported mesial and upper borders of the pelvis. These sections yield or stretch and do not compress the renal arteries until late in the disease.

In a large proportion of cases a diagnosis of hypertension could be made from urographic studies alone. This procedure is also of importance in the prognosis of surgical cases of hypertension due to renal lesions. If, as is often the case, the patient has a bilateral intrarenal pelvis and one side is nephrectomized because of some pathologic condition, the reduction in blood pressure, if any, is of more or less short duration, particularly if infection is present in the remaining kidney. If, however, one side has an extrarenal pelvis and the other an intrarenal one, removal of the latter produces a more permanent reduction in blood pressure. Conversely, if the pathology necessitating nephrectomy occurs on the side of the extrarenal pelvis, and the kidney with the intrarenal pelvis is normal, the blood pressure remains normal until some pathologic condition de-

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CLINICAL NOTES

CHOLECYSTOSTOMY VERSUS CHOLECYSTECTOMY IN CHRONIC TYPHOID LIVER CARRIERS

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A TYPHOID carrier is a person who harbors the *Bacillus typhosus* and may spread the disease by contact.

Schematically, typhoid carriers in general fall into the following classifications:

Temporary or Chronic

(1) Feces carriers

(2) Urine carriers (rare)

Feces carriers are classified according to the nidus of infection

(a) Intestinal carriers (rare)

(b) Gallbladder carriers

(c) Liver carriers

In the latter two groups, the bacilli enter the intestines through the bile.

Social Problems

TYPHOID carriers are both a menace to the immediate members of the family and to the community at large. The condition endangers the life of the carrier himself. Preventive medicine should play an active part to eradicate the disease. Statistics show that in 1933 there were 662 carriers on record in New York State, of which 346 were in New York City. Steb-

bins estimated that, as of Jan. 1, 1936, there were approximately 5000 typhoid carriers in New York State, excluding New York City. Frants reports that on July 1, 1936, the New York City Department of Health had 405 chronic typhoid carriers under observation.

According to these reports, the carriers would seem to be on the increase. This large percentage, observed during the three years that elapsed between 1933-1936, might logically lead to such a conclusion, but such an increase can be explained by the presence of more gallbladder clinics with greater facilities and that these carriers are discovered by doing routine duodenal bile cultures.

It has been proven that during the past five years in the State of New York, no typhoid infection has occurred due to contaminated water supply. According to Stebbins, these carriers are the chief infecting agents.

A convalescing typhoid patient should have several duodenal bile cultures negative before he is discharged as cured. During

the period of convalescence patients may become bile carriers and spontaneous cures have been reported. When typhoid carriers are discovered, the health authorities should not be satisfied by imposing only certain occupational restrictions, but should take an active interest in the care and ultimate cure, if possible, of these unfortunate victims. They should be treated like tuberculous patients and be kept under constant medical supervision. If surgical intervention is deemed necessary, a carrier should be persuaded to submit himself to such a procedure not only for the safety of the public, but for his own interest. Many are so conscious of the stigma afflicting them that they readily submit to an operation. An objector should be treated like an ordinary offender against the sanitary code.

Medical Aspects

CHRONIC carriers are usually bile carriers. The intestinal chronic carrier is rare. The nidus of infection may be in the gallbladder and its walls; it may extend into the sacculi of the common bile duct, into the hepatic ducts, extending into the liver as an ascending cholangitis, or extending into the liver cells in which event the patient becomes a liver carrier.

In the presence of repeated positive duodenal cultures, the patient should be considered a bile carrier and, for such a chronic bile carrier, surgery is the measure that offers any possibility of a cure. If the bile is negative and the stools continue to be positive, he must be classified as an intestinal carrier, for whom surgery is contraindicated. The latter group belong to preventive medicine.

If the nidus is the gallbladder and there is no dyskinesia present the organ may be able in time to free itself from the infecting organism by its periodic emptying into the intestines. The presence of a stone may act as a mechanical block hindering a complete contraction of the gallbladder, so that the organ is partly emptied, thus infecting the newly formed bile.

A bile carrier may have a localized infection of the gallbladder and its walls and have the symptoms of a chronic cholecysti-

tis. If stones form, the patient will have the symptoms of chronic cholelithiasis. In long-standing cases the infection may extend into the sacculi of the common bile duct, the hepatic ducts, involving the entire biliary tree, and may extend into the hepatic parenchyma, causing liver damage with concomitant derangement of its functional activity. Jaundice may or may not be present. And yet, cases have been found with a completely destroyed gallbladder function, with stones enclosed in a fibrotic gallbladder sac and a history of carrying typhoid infection as long as 30 years, during which time no symptoms of gallbladder disease had developed (see a case report of Dr. R. Franklin Carter, *Med. Record and Annals*, Houston, Texas, March, 1940). Some carriers enjoy considerable comfort.

Many carriers deny having had typhoid fever or that they are cognizant of being carriers. Some admit having been exposed to the infection. Usually the symptom-complex of gallbladder disease brings them either to gallbladder clinics or to consult a physician.

In 1929 Dr. A. O. Whipple published an article in which it was noted that Haaland (Norway) in a series of 14 cases had obtained 70 per cent of cures by cholecystectomy. In an article published by E. Hanssen in 1939 in a series of cases operated on in the Post-Graduate Hospital the cures reached 88 per cent.

Prognostic Factors

(a) **AGE:** Patients over 45 with a long history are poor surgical risks.

(b) **DURATION OF ILLNESS:** The longer the duration, the greater the possibility that the infection has progressed from the gallbladder into the ducts or into the liver. According to the most recent observation, liver carriers are not benefited by surgery.

(c) **A preoperative diagnostic bile specimen** has been considered a prerequisite to operation in chronic carriers who are free from gallbladder pathology. A negative bile specimen in a carrier is a contraindication to a cholecystectomy.

(d) Even though intestinal carriers are

rare there is no justification for subjecting a patient to a cholecystectomy without definitely knowing that he is a chronic bile carrier, unless there is definite evidence of gallbladder pathology.

(e) When there is suspicion of biliary tract involvement, a cholecystostomy should be the operation of choice.

(f) One would expect in chronic bile carriers a positive Widal and yet the reaction may be negative, thereby demonstrating that the bacilli act only as toxic agents and do not create an immunity against typhoid fever for the patient. Therefore to carriers who have not had typhoid fever, with a negative Widal, typhoid vaccine might be given before the operation.

(g) 5 per cent Glucose should be given either as a clysis or intravenously before and after the operation.

(h) Bleeding, clotting, and prothrombin times should be ascertained.

(i) Bacteriophage may be given before and after the operation.

These grades of pathology are not easily discernible. There are no demonstrable pathognomonic signs as to the location of the infection when the entire biliary tract is involved. If the infection has passed beyond the gallbladder, it can only be determined during the operation by staining the bile coming from the common bile duct or by culturing it for typhoid bacilli. The invasion takes place slowly and imperceptibly. In most cases there is no severe symptomatology. The fact that some of the patients remain carriers after a cholecystectomy should not discourage surgery. These cases must have been also liver carriers, for whom there is no cure at this time. If there is a suspicion that they are liver carriers, an attempt can be made to render the liver sterile by draining the stump of the cystic duct.

Gulbrandsen reports four cases in a series of twelve treated successfully with deep Roentgen therapy, but Forback and Lampe met with no such success.

Case Report. W.T., white male, forty-five years old, well developed, well nourished and apparently in good health. Never acutely ill in his life. Ten years ago, while sojourning in the mountains, had a gastro-intestinal upset accompanied with epigastric and upper right quadrant pains, lasting several days.

The attending physician did not diagnose this episode. Four years ago, a daughter was infected with typhoid fever, and in checking all the members of the family in a routine feces examination, he was discovered to be a chronic typhoid carrier who had infected the daughter by contact. Patient denied having had typhoid or that he was ever exposed to it. Since the discovery as a carrier, patient has been under the direct control of the Board of Health. During the past four years, at irregular intervals, has had upper right quadrant pains accompanied with nausea, occasionally with vomiting. He has observed at times clay-colored stools; no history of jaundice. He came to the author's attention for help, and the patient was sent to Morrisania Hospital.

His physical findings showed nothing abnormal except for the presence of *B. typhosus* in the feces. The cholecystogram revealed an enlarged gallbladder which emptied poorly after a fatty meal. No evidence of calculi. The x-ray diagnosis was of a pathological gallbladder. These findings coincided with the symptoms of gallbladder disease from which the patient had apparently been suffering for ten years. He was classified as a chronic bile carrier and a cholecystectomy was advised.

W.B.C. 7,200 poly. 67 lymph. 35

Urine negative, Widal negative

On April 21, a cholecystectomy was performed. Operative findings disclosed a distended gallbladder containing a single calculus measuring 2 by 2 cm. The gallbladder was removed from the fundus inward. The serosa was thick and fibrotic; it did not strip easily. Cystic duct and artery were tied separately. One cigarette drain introduced; closure in layers.

Culture of the contents of the gallbladder yielded *Bacilli typhosus*. Section of the gallbladder walls showed chronic suppurative cholecystitis. Twenty-four hours postoperative temperature rose to 104, pulse 140, respiration 44. Patient was tachypneic and distended; x-ray of the chest was negative. Blood culture was taken at this time and showed the growth of *B. typhosus* in 72 hours. Third day patient had a chill followed by high temperature. The following ten days the patient's condition continued to be poor. Jaundice, which had appeared on the fourth day, deepened progressively. The icteric index rose to 150. Toward the end, patient appeared to be very toxic. He was apathetic and disoriented. It was concluded that patient had a typhoid septicemia with ascending cholelithiasis, cholangitis and toxic hepatitis. Incision had healed *per primam*.

On the 12th postoperative day, it was decided to do an exploration to relieve any possible obstruction or to drain the common bile duct. Abdomen was opened under spinal anesthesia. The choledochus was located and aspiration practiced with the large needle, but no bile could be obtained. The same procedure was practiced with the hepatic ducts unsuccessfully. Abdomen was closed. Patient died twenty hours later.

Conclusion:

FOR chronic gallbladder carriers, a cholecystectomy is the only means which at present offers any cure. For liver carriers, this mode of approach does not solve the problem; they will remain as such even after a cholecystectomy. One might logically conclude that in longstanding cases the inflammatory process has progressed beyond the gallbladder and its walls. It might be well to bear in mind the possibility of a chronic suppurative cholecystitis involving all the walls of the entire

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CIRCULATORY CHANGES IN THE

Infarcted Kidney

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and

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Abstract

IN a study in which the experimentally infarcted rat's kidney was observed, using the technique of India ink injection and dissection at intervals of a few minutes to one year after obstructing a branch of the renal artery, we were able to demonstrate the path of the return of the circulation to the infarcted area. This path is by way of the capillary and precapillary connections between the open and the obstructed circulation; in the renal substance it consists of interglomerular connections which bring the blood through the glomerular tufts into the main branches of the occluded artery. The glomeruli at the periphery of the infarct therefore remain in constant connection with the blood supply. The glomeruli which remain shrink to minute bodies still distinguishable a year after the occlusion. Circulation is re-established early in the larger branches of the occluded artery, but the interlobular arteries in the interior of the infarct contain thrombi and undergo necrosis. Their walls are regenerated within the limits of the old necrotic ones and communicate with veins and capillaries

along the pattern of the former circulation. This re-established circulation does not include the capillaries of those glomeruli which have undergone necrosis. There is no ingrowth of vessels from the periphery.

Discussion:

Dr. Howard W. Brondum, Departments of Medicine, Physiology, and Pharmacology (Abstract). Dr. Loomis's technique is a well substantiated one. The union of capsular and superficial cortical vessels of the kidney which appears upon damage to the capsule is of value. The possibility of some reconstruction of the infarcted tissue through the vasa vasorum of the main renal vessel must be entertained, such reconstruction taking place by anastomoses intrarenally.

Did any anatomic change take place in the dilated vessels after they had taken over their new function and greatly increased load? Some observations as to urinary findings and changes in blood pressure in the course of the controlled ischemia would have been of value. Clinically it would be of interest to know whether these new vessels appear in diseased kidneys as the disease progresses. If they do and are damaged in their turn

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by disease, it would explain why the severest symptoms of renal diseases appear so late in their course.

Dr. Loomis: The walls of the dilated

vessels become markedly thickened, but no histological studies were made to determine whether this was due to muscle, which would indicate a change to true arterioles.



THE PERSISTENCE IN THE ADULT WHITE MALE OF THE FASCIA OF FUSION OF TOLDT

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Abstract

TOLDT (1879) demonstrated the formation of fascia from two opposed layers of peritoneum when segments of the colon and their mesenteries fused to the body wall. Similar fascias were formed by fusion of parts of the mesenteries of stomach and pelvic colon. Only Walther Vogt ('25) has furnished material evidence for the persistence of this fusional fascia in the adult, and his work is limited in force by the almost exclusive employment of dissections.

Our research for the fusional fascia in the adult is based on a considerable number of series of cross sections of the abdomen. Each section was traced, then dissected, and the tracings checked by the dissection.

We find that the fascia of fusion persists over most of its original territory though often it is not very thick.

A convincing evidence of the authenticity of the colic fascia of fusion is its constant passage behind the colon to fuse to the paracolic gutter. Its true nature appears strikingly where intercalated between parasigmoid fossae.

The ureter above the linea terminalis is more frequently fused with the fascia than placed behind it. The testicular

vessels usually are in it. The root of the jejuno-ileal mesentery has a fascia of fusion. Also the cecum possesses one if it be fused to the wall. In cases of free appendix the cecal fascia of fusion attaches to the peritoneum behind this organ.

The fusional fascia delineates the posterior surface of the fused mesenteries in question, and proves their persistence in the adult.

Discussion:

Dr. Robert F. Barber, Department of Surgery, Long Island College of Medicine (Abstract). The surgeon takes advantage of the anatomical facts brought out in this paper when he is resecting the colon. Running parallel to the ascending and descending colons in the lumbar gutter on the right and left sides is seen a white line which probably represents the outer limits of the fusion between the mesenteric peritoneum and the peritoneum of the posterior abdominal wall and therefore also stands for the attachment to the peritoneum of the fascia of fusion. The surgeon makes an incision anterior to the white line and about 1 cm. from it. If the incision is carried on the right side from the cecum to the hepatic flexure, a bloodless dissection may be made almost to the midline. With the bowel and the

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anterior peritoneal leaflet is incorporated the lamina mesenteriae propria, which contains all the vessels and nerves and a considerable amount of connective tissue, especially about the vascular structures, and the entire blood supply is elevated along with the anterior leaflet of the mesentery. On the left side of the body

in relation to descending and ilio-pelvic colons the anatomy and surgical procedure is similar to that which has just been explained for the dextral side of the body.

I believe that these fascial planes have important practical significance, and the careful operators will take full cognizance of their distribution.



VITAMIN K ADMINISTERED TO THE MOTHER DURING LABOR AS A PROPHYLAXIS AGAINST HEMORRHAGE IN THE NEWLY BORN INFANT

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Abstract

TO study the effect on the prothrombin activity of the infant, alternate mothers were given vitamin K during labor in 200 maternity admissions, leaving the other 100 as normal control infants. The clotting activity of all the infants was examined on the first, second, and fourth days of life. This was 70 per cent below that of normal adults in the control group on the first day. The reduction was greater on the second day, reaching dangerously low levels at times. Half of the infants with a clotting time 35 per cent below normal for adults showed hemorrhage. However, in the 100 infants whose mothers received vitamin K, the prothrombin activity approached normal even on the first day of life. Besides this there was no fall in it on the second day.

Clinical observations paralleled these laboratory tests. In 2057 cases in which alternate women were given vitamin K prophylactically during labor, 21 (2 per cent) of the control group had various types of hemorrhage in the newborn as

compared to 5 (0.2 per cent) in the vitamin K series. The drug administration to the mother appeared to cause approximate reduction of hemorrhage in the newborn of 75 per cent. The authors suggest routine administration of 0.2 mg. of vitamin K every four hours to the mother in labor. This should reduce hemorrhage in the newborn following premature, long, and difficult labors.

Discussion

Dr. Peter A. Perillo, M.D., Department of Pediatrics, Long Island College of Medicine (Abstract). The study presented by Dr. Taylor excellently bears out the direct relationship between a hypoprothrombinemia and hemorrhagic disease of the newborn, and also the specificity of vitamin K as a prophylactic agent.

Since the routine use of vitamin K was begun in 1939 we have had no case of the disease in our nursery. Apparently we shall have to alter our definition of hemorrhagic disease to include a number of cases previously attributed to trauma, as it seems that the trauma itself would not be of great significance if there were

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not an underlying hemorrhagic tendency. All incidence of hemorrhage, including intracranial, retinal, and sternomastoid types, has been reduced coincidentally with the prophylactic use of vitamin K.

This agent is specific in the treatment of hemorrhagic disease. Following its ad-

ministration, Poncher and Kato have found a notable drop in the prothrombin time in two hours and a return to normal in many instances in six hours.

In the future, hemorrhagic disease will probably be placed in the category of a preventable disease.



The American Social Hygiene Association's Syphilis Study

FROM the data presented in this study, it appears that the average prevalence rate for syphilis for the adult population was 3% for the years 1935-1940. It should be borne in mind that this rate is a general rate, based on a nation-wide

sample, and not applicable to any one region.

It seems to be desirable to collect material of this nature systematically so that some trend may be established and so that the extent of the prevalence of syphilis may be determined for occupational, age, and color groups.



CLINICAL NOTES

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biliary tract and not subject to gross visualization, as in the present case. A simple cholecystostomy, removing any calculi if present, should have been the operation of choice. With the latter procedure the shock would have been less, there would have been better drainage of the biliary

ducts and the liver, it would have favored the reduction of the edema involving the walls of the entire biliary tree, and thus slowly created a favorable condition for a subsequent cholecystectomy.

Postoperative Points of Interest:

Positive blood cultures (twice) for *Bacillus typhosus*

Positive Widal

Complete block of biliary ducts

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Survivals **FOR FROM FIVE TO NINE YEARS OF PATIENTS TREATED FOR CANCER IN THE HOSPITALS OF ROCHESTER, NEW YORK**

IN 1930 the New York State Committee of the American Society for the Control of Cancer began to report cases of cancer in which the patients, after suitable treatment, had survived five years without recurrence. The Committee believed that knowledge that the physicians practicing in the communities of the State were able to diagnosticate cancer and to provide suitable treatment for cancer, provided the patient applied for examination before hopeless metastases had developed, would tend to relieve the defeatist attitude on the part of the profession as well as of the laity. The investigation was begun in Monroe County because that County is the headquarters of the Committee. The first report, made in 1930, from the six active hospitals in the County showed that forty-

three patients with cancer had survived the five year period. The microscopic slides were studied by three pathologists, one from each of three hospitals, and all had concurred in the original diagnosis. Annually since, the reports have been made in 1931, thirty-five cases were reported; in 1932, twenty-three; in 1933, twenty-two; in 1934, thirty; in 1935, twenty; in 1936, thirty-two; in 1937, forty-one; in 1938, fifty-two; in 1939, sixty-seven; a total of 365.

This year we are reporting eighty-one additional cases. One of the hospitals, The Genesee Hospital, during the year has made a fairly complete survey of its tumor cases back to 1924; of these cases seventeen fall in the six to sixteen year survivals. In future reports they will be distributed to the suitable year period. These cases bring the total number of five year survivals to 446.

Reported at the Sixteenth Annual Meeting of the New York State Committee of the American Society for the Control of Cancer, held in Rochester, New York, December 10, 1940.

Table 1

	To Be Accounted For	Living	Dead	Lost
Carcinoma of the Breast:				
1936 GROUP (9 YEARS)	11(1)	7	3(8)	1
1937 GROUP (8 YEARS)	15	10	1(8)	4
1938 GROUP (7 YEARS)	12	11	0	1
1939 GROUP (6 YEARS)	27	22(6)	3—2(7)1(8)	2
Cervix:				
1936 GROUP	6(2)	5(4)	0	1
1937 GROUP	6	6	0	0
1938 GROUP	3	3	0	0
1939 GROUP	9	9	0	0
Gastro-intestinal Tract:				
1936 GROUP	2	2	0	0
1937 GROUP	2	2	0	0
1938 GROUP	5	5	0	0
1939 GROUP	14	8(6)	3—1(7)2(8)	3
Male Genito-urinary Tract:				
1936 GROUP	2	2	0	0
1937 GROUP	4	3	0	1
1938 GROUP	3	3	0	0
1939 GROUP	7	6	0	1
Ovary:				
1938 GROUP	3	2	1(8)	0
Body of the Uterus:				
1936 GROUP	7(3)	6	0	0
1937 GROUP	1	1	0	0
1938 GROUP	11(5)	10	1(8)	0
1939 GROUP	2	2	0	0
Miscellaneous Malignancies:				
1937 GROUP	7	4	0	3
1938 GROUP	9	6	0	3
1939 GROUP	6	6	0	0

(1) One case transferred from seven year group last year. (2) One case added from body of uterus. (3) One case subtracted and added to cervix. (4) One with recurrence. (5) One reported 1-st in 1939 reported this year. (6) A second cancer developed in one case. (7) Died of cancer. (8) Dead, cause unknown.

Dr. William B. Hawkins, Assistant Professor of Pathology in the School of Medicine and Dentistry of the University of Rochester; Dr. Otto L. Munch, Direc-

tor of the Laboratories of the Genesee Hospital; and Dr. Sidney C. Madden, Pathologist to the Park Avenue Hospital,

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Table 2
Five Year Survivals—1940
The Genesee Hospital

Organ	Surgeon	
Operated 1924—16 Years		11. Breast
1. Breast	Dickinson	12. Kidney
2. Breast	Snow Sr.	13. Breast
3. Breast	Snow Sr.	
Operated 1926—14 Years		14. Breast
4. Breast	Bradstreet	15. Breast
Operated 1927—13 Years		16. Bladder
5. Cervix	Bradstreet	17. Bladder
6. Breast	Dean	
Operated 1928—12 Years		18. Breast
7. Breast	Bradstreet	19. Breast
8. Breast	Snow Sr.	20. Breast
9. Breast	Snow Sr.	21. Breast
Operated 1929—11 Years		22. Breast
10. Breast	Graham	23. Cervix
		24. Ovary
		25. Rectum
		26. Larynx
Operated 1930—10 years		
		Lunsford
		Paine
		Sumner
Operated 1933—7 years		
		Simpson
		Snow Sr.
Operated 1934—6 Years		
		Crino and Paine
		Merle Evans
Operated—1935		
		Smarzo and Mitchell
		T. B. Jones
		Sumner and Houck
		Rumbold
		Zimmer
		Staff
		Mitchell
		Jewett and Mitchell
		Carroll

formed the Committee of review of the histological material.

The accompanying table (Table 1.) will show the present status of the cases reported in 1936, 1937, 1938 and 1939.

TABLE 2 shows the distribution of the cases in the various hospitals, the organ involved and the surgeon who attended the patient. The following is the personnel of the committee, to whom we

extend our sincere thanks for their co-operation. Genesee Hospital, Lyman Crowell Boynton, M. D., Highland Hospital, William Frank Fowler, M.D., F.A.C.S., Park Avenue Hospital, John Mumford Swan, M.D., F.A.C.P., Rochester General Hospital, Floyd Howard Densmore, M.D., St. Mary's Hospital, George R. Bodon, M.D., Strong Memorial Hospital, Samuel Jay Stabins, M.D., F.A.C.S., and Karl M. Wilson, M.D., F.A.C.S.



Table 2. continued

Highland Hospital	
Organ	Surgeon
1. Breast	D'Amanda
2. Breast	Dean
3. Cervix	Stabins
4. Colon	D'Amanda
5. Lip	Calihan
6. Uterus (body)	Bascom

Park Avenue Hospital	
Organ	Surgeon
1. Breast	Olsen
2. Breast	Huber
3. Breast	Bowen
4. Breast	Simpson
5. Cervix	Lapi
6. Cervix	Caccamise
7. Larynx	McDowell
8. Uterus (body)	Welch

Rochester General Hospital	
Organ	Surgeon
1. Bladder	Melen
2. Breast	Prince
3. Breast	Winslow
4. Breast	Wooden
5. Breast	Stewart
6. Cervix	Hutchens
7. Colon	Prince
8. Colon	Prince
9. Lymphosarcoma	Winslow
10. Ovary	Prince
11. Ovary	Lakeman
12. Skin (ear)	Gorin
13. Skin (cheek)	Hutchens
14. Uterus (body)	Prince
15. Uterus (body)	Prince

St. Mary's Hospital	
Organ	Surgeon
1. Bladder	Schantz
2. Breast	Guzzetta
3. Breast	Duffy
4. Breast	Hartigan
5. Breast	Costello
6. Breast	Simpson
7. Breast	Simpson
8. Uterus (body)	Simpson

Strong Memorial Hospital	
Organ	Surgeon
1. Breast	Morton
2. Breast	Morton
3. Breast	W. J. M. Scott
4. Breast	Pearse
5. Breast	Staff
6. Breast	Staff
7. Cervix	Gynecological Service
8. Cervix	
9. Cervix	
10. Ovary	Gynecological Service
11. Sarcoma	
12. Sigmoid	
13. Stomach	Pearse
14. Uterus (body)	Gynecological Service
15. Uterus (body)	
16. Uterus (body)	
17. Uterus (body)	
18. Uterus (body)	

Summary	
Genesee Hospital	26
Highland Hospital	6
Park Avenue Hospital	8
Rochester General Hospital	15
St. Mary's Hospital	8
Strong Memorial Hospital	18
	81

Bladder	4
Breast	40
Cervix	9
Colon	3
Kidney	1
Larynx	2
Lip	1
Lymphosarcoma	1
Ovary	4
Rectum	1
Sarcoma	1
Sigmoid	1
Skin	2
Stomach	1
Uterus	10
	81

CONTEMPORARY PROGRESS

A New Method for Study of the Fasting Insulin Requirement of the Severe Diabetic

H. E. MARTIN,
P. O. GREELEY and

SIDNEY SOLL (*American Journal of Medical Sciences*, 200: 509, April 1941) describe a method employed for the determination of the insulin requirement in severe diabetes for the periods when food is not being absorbed, which, with the usual dietary schedule, occur principally at night. Blood sugar determinations were made on diabetics during a fasting period from 7 a.m. to 1 p.m. In patients with severe diabetes the blood sugar rose during this period, even though insulin had been given at midnight. In patients with a mild type of the disease, there was no rise in blood sugar during the fasting period, although no insulin was given at midnight. The hourly dosage of insulin required to insure a normal range of blood sugar during the fasting period represents the basal insulin requirement in cases of severe diabetes. In the 5 cases in which this test was made this basal insulin requirement varied from $\frac{1}{2}$ to $2\frac{1}{2}$ units hourly. This method for determining the basal insulin requirement by hourly injections of insulin during a fasting period is not practical for clinical use. It has been found that the



basal insulin requirement shows a general correlation with the total twenty-four hour insulin requirement. Thus with a total daily insulin requirement of 50 to 70 units, basal requirement is from 1 to $1\frac{1}{4}$ units per hour, while with a total daily insulin requirement of over 100 units, the basal requirement is over 3 units per hour. Thus when the diabetes is moderately well controlled by three or four injections of insulin daily, the basal insulin requirement can be calculated on the basis of the total daily dosage. Another test for the basal insulin requirement may be made using protamine zinc insulin. The patient receives no food for fourteen hours, including the time of the test. An injection of protamine zinc insulin is given at 7:21 a.m. and blood sugar determinations made at intervals of two hours for the next eight hours. The dosage of protamine zinc insulin was calculated on the basis of the total daily dosage needed to control the disease in each case. Thus if the total daily dosage was 70 units, the basal insulin requirement was calculated as $1\frac{1}{4}$ units per hour, and 10 units of protamine zinc insulin was given for the eight hour test. If there was little or no rise in the blood sugar during the period of the test, the dosage of

protamine zinc insulin employed represents the basal insulin requirement. In 3 cases in which the basal insulin requirement was determined by both the hourly insulin injections and the single protamine zinc insulin injection, the results were in good agreement. From the clinical viewpoint protamine zinc insulin is preferable to regular insulin to cover the basal requirement, because of its slow steady absorption. The basal insulin requirement exists throughout the twenty-four hours of the day, but it is "a therapeutic problem" only at night; thus if protamine zinc insulin to cover the basal requirement up to the time of breakfast is given at the same time as the regular pre-dinner insulin in cases of severe diabetes, the blood sugar is kept at normal levels throughout the night. In the authors' experience this measure has proved of great practical value in controlling severe diabetes in cases that could not be satisfactorily controlled by regular insulin alone.

COMMENT

In some instances a mixture of standard and protamine zinc insulin is used. Ulrich (Annals Int. Med. 14:1166, 1941) recommends this especially when protamine zinc insulin does not prevent marked periods of postprandial hyperglycemia.

M.W.T.

Some Effects of Iron on Hemoglobin Formation

W. M. FOWLER and A. P. BARER (*American Journal of Medical Sciences*, 201: 642, May 1941) report a study of

the effect of the administration of iron and ammonium citrates and reduced iron on hemoglobin formation in persons with mild grades of anemia (not due to hemorrhage or infection) or with normally low hemoglobin. In some cases the iron was given for sixty days and then discontinued, repeated blood counts being made for periods up to twenty-six weeks; in other cases the administration of iron was continued throughout the period of

observation. With both types of iron medication, in a dosage of 1 gm. daily, there was an increase in hemoglobin which reached its peak in ten to twelve weeks; and then gradually decreased. The hemoglobin curves were of the same type whether the iron therapy was discontinued at the end of sixty days or not. The increase in hemoglobin, the peak of hemoglobin formation, and the subsequent reduction were similar in patients who showed mild grades of anemia and in persons who showed low hemo-

globin values apparently normal for them, with the exception that in the latter, the hemoglobin fell to the pre-treatment level, while in the cases of anemia it remained above this level although "below the point of maximum response." The fact that the hemoglobin falls below this point of maximum response to iron therapy, whether the iron medication is continued or not, indicates that iron acts not only as a "replacement therapy" but also has a stimulating action. If this is true there should be a response to iron therapy in persons whose hemoglobin values are

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relatively high. In 12 male subjects showing hemoglobin values from 13.33 to 15.74 gm. per 100 cc., the administration of 1 gm. iron and ammonium citrates daily did, in fact, cause a slight but definite rise in hemoglobin, and the hemoglobin curve showed the same characteristic rise, peak, and decline as in the subjects with low hemoglobin. These findings, therefore, support the conclusion that iron therapy has a stimulating action on hemoglobin formation.

The Clinical Significance of the Low or "Flat" Oral Glucose Tolerance Curve

M. J. LEPORE (*Annals of Medicine*, 14: 2008, May 1941) reports a study of 90 patients showing a low blood sugar curve after the ingestion of 100 gm. glucose. The blood sugar curve was considered to be abnormally low or "flat" if the rise in blood sugar during the two or three hours following the administration of the glucose was less than 40 mg. per cent. Of the 90 patients in which this type of glucose tolerance curve was found, 28, or 31.1 per cent, showed definite obesity; in these cases, the patient's diet had invariably included a high percentage of carbohydrate. Eleven patients showed renal glycosuria; quantitative studies of urinary sugar were not available in these cases, but it may be that excess renal elimination was the sole cause of the low blood sugar, or that there was accelerated glycogenesis as a compensation for the renal loss of carbohydrate. In 10 cases there was malnutrition and anorexia; while the glucose tolerance curve was low in these cases, the blood sugar levels were within normal range; the cause for the low glucose tolerance curve in these cases may also be found in the dietary, which was characterized by high carbohydrate. There was only one patient in this group with "classical hyperinsulism," cured by removal of an islet cell adenoma. There were 9 cases of hypothyroidism and 3 cases of hypopituitarism. There were 4 cases with definite signs of vitamin B complex deficiency; it has been shown that intestinal absorption of glucose is retarded by this vitamin deficiency, which may be a factor in the

causation of a low glucose tolerance curve. From these findings the author concludes that in the absence of any definite disorder of the endocrine glands, the ingestion of a diet high in carbohydrate appears to be the most important cause of the "flat" glucose tolerance curve. Before "attaching diagnostic import" to the presence of this type of blood sugar curve in any particular disease, the previous dietary of the patient must be determined. In obese patients, it has been found that the institution of a reducing diet relatively low in carbohydrate tends to normalize the glucose tolerance curve.

COMMENT

To repeat, previous restriction of carbohydrate may give a false diagnosis.

M.W.T.

Colloid Laxatives Available for Clinical Use

H. GRAY and M. L. TAINTER (*American Journal of Digestive Diseases*, 8: 130, April 1941) present a study of the colloid laxatives available for clinical use. The various products of this type available include colloidal clays, dried fruits, marine mucilages (agar-agar), acacia, tragacanth and psyllium. The latter two groups include the most important products for clinical use. It was found that in distilled water, the tragacanth preparations swelled to about 75 times their initial volumes, the psyllium products about half as much. In solutions containing sodium chloride, hydrochloric acid or sodium bicarbonate in concentrations comparable to those present in the gastro-intestinal tract, the increases in volume were reduced to about 20 times for the tragacanth preparations and 15 times for psyllium products. The effect of several tragacanth and psyllium products on the stools was studied in five human subjects; each product to be studied was given in 5 gm. daily doses for seven days; the periods of medication were alternated with periods of seven days without medication. The 5 gm. dose, the authors note, is smaller than the dosage required for optimum action in many patients. The results of the tests showed

that black psyllium seeds have a constipative effect, reducing the frequency of defecation and rendering the stools firmer and bulkier with diminished water content. None of the other products studied affected the frequency of defecation in the dosage used. The tragacanth products (Imbicoll and Karaya) caused an increase in the total daily fresh and dry weight of the stools and the percentage of water. The increase in dry weight was "almost exactly" that of the dry gum given, indicating that the tragacanth is not broken down in the intestines, but pass through unchanged. The processed psyllium products (Konsyl, Mucilose and Siblin) increased the total daily bulk of the stools and increased the water content to a considerably greater extent than the tragacanth products. The dry weight of the stools was not increased by the psyllium products, indicating that their hemicellulose is "at least partially broken down in the intestine to irritant but absorbable materials." From these findings the authors conclude that the laxative action of tragacanth derivatives is due primarily to their colloidal swelling, that of the psyllium products partly to "a mild direct irritant effect" in addition to their colloidal swelling (which is of lesser degree than that of the tragacanth). In the clinical use of tragacanth or psyllium products, the preparations that are "processed" into granular form or coated to delay swelling are preferable; all should be given with "liberal quantities of water, to keep the intestinal contents as fluid as possible."



*Static Electricity in Tissues
as a Guide in Surgical Care*

E. SINGER and D. D. DAVIS (*Brooklyn Hospital Journal*, 3: 99, April 1941)

MEDICAL TIMES, JULY, 1941

discuss recent studies on the electric charges of the tissues and tissue fluids. It has been determined by means of the micro-potentiometer that various organs "considered as a whole" have definitely positive or definitely negative charges in relation to blood and distilled water; blood itself is "divided into two parts" in regard to its electric charges, the plasma being negatively charged, the cells positively charged. It has also been found that the electric charge "attracts the oppositely charged substances" and thus the mineral content of any tissue or organ depends upon its electric charge. Negatively charged organs show an excess of water, sodium and chlorine and a deficit in potassium and glucose; positively charged organs show the reverse. Every major surgical operation causes a change in the electric charge of the organs, which is in the nature of a depression, tending to equalize the potential difference between the organs; in shock, "there is a precipitate fall" in the tissue potentials. With this change in the electric charges of the organs, there are changes in their mineral constituents and "an exchange of minerals between blood and tissues." The increase of one substance in the blood during shock indicates a decrease of that substance in the tissues. The aim of treatment in surgical shock must be "to restore the normal electrical potential and to replace the minerals that have been lost as a result of shifting." One of the authors (Davis) has found that the administration of oxygenated whole blood by the intravenous drip method (38 to 40 drops per minute) is more effective in the treatment of hemorrhage and shock than the usual type of blood transfusion; 40 patients have been treated by this method after severe hemorrhage, receiving from 2000 to 5000 cc. of blood in thirty-six to eighty-four hours. All these patients withstood operation well and made good recoveries. Other investigators have found that quinine, pyrazolone and other phenol derivatives, and various hormones increase the electric potentials of tissues; the possible therapeutic use of these substances is being further investigated.

COMMENT

This article, calling attention to recent studies on the electric changes of the tissues and tissue fluids, should arouse interest; for experimental and clinical investigation is being undertaken on a scale never equalled before. Physicists, biochemists, physiologists, clinicians and a host of others are presently engaged in detailed inquiry and thorough study of many diversified and baffling problems.

This is particularly made manifest in the interest shown in the constituents, reactions and changes in the body fluids and tissues in health and disease and in the many factors responsible for these changes. It is very necessary that the practitioner keep himself informed as to the worth while conclusions established by trustworthy investigation. On the other hand too much time, energy and interest expended in the research laboratory, in the library or in experimental work may take the doctor so far away from the patient that he never actually gets back to him. It is necessary for the practitioner to be intensely practical.

The material discussed in this article is interesting and informative and Dr. Davis makes a clinical suggestion which should prove to be helpful in the treatment of hemorrhage and shock.

T.M.B.

The Use of Paredrinol to Correct the Fall in Blood Pressure During Anesthesia

D. B. ANDERSON (Minnesota Medicine, 24: 335, May 1941) reports the use of paredrinol, "a synthetic pressor drug of the epinephrine-ephedrine series" to correct the fall of blood pressure occurring during spinal anesthesia, in 31 cases. In all these cases paredrinol was given by intramuscular injection when the systolic blood pressure fell below 90 mm. No pressor drug and no atropine had been given prior to the anesthesia in any case. In an early case in this series an injection of 40 mgm. of paredrinol induced a temporary hypertension. In most of the cases the dose was 20 mgm.; in elderly and arteriosclerotic patients, an initial dose of 10 mgm. was sometimes used. A single injection of the drug was sufficient to raise the blood pressure and maintain the systolic pressure above 100 mm. mercury in 23 of the 34 cases; in 2 additional cases a normally low blood pressure was maintained by a single injection. In 4 cases a second injection of

10 to 20 mgm. was required to maintain the blood pressure at an "adequate" level. In 2 cases paredrinol failed to correct the fall in blood pressure; in both these cases, the patient was "critically ill" and prolonged surgical procedures were required; the blood pressure was restored to a satisfactory level by means of intravenous administration of fluids. There were no operative or hospital deaths in this series, and no postoperative complications that could be attributed to the method of anesthesia. There were no symptoms of marked stimulating effects of paredrinol on the cortical centers, which often occur with other pressor drugs, and no cardiac irregularities due to the drug.

COMMENT

It would seem from the evidence presented by the authors that paredrinol will probably become a very welcome addition to the armamentarium of the anesthetist responsible for spinal anesthesia.

Ephedrine given before and repeated during the course of the anesthesia has been entirely satisfactory in the experience of this commentator.

The universal acceptance of the method of continuous spinal anesthesia recently popularized by Dr. William T. Lemmon, of Philadelphia, proves that it is a very safe and satisfactory form of anesthesia, and widely adaptable.

With this method the anesthetist is in control of the anesthesia to a greater extent than was possible in any form of spinal anesthesia heretofore described.

The degree of hypotension and the possibility of unfavorable complications have been reduced to a minimum. However, it is salutary to know that paredrinol is available and dependable in emergency.

T.M.B.

Changes in the Liver Associated with Hyperthyroidism

J. W. LORD, JR. and W. DeW. ANDRUS (*Archives of Surgery*, 42: 643, April 1941) review the evidence indicating that there is some morphologic damage to the liver and also impairment of liver function in hyperthyroidism—facts which should be taken into consideration in planning the diet for patients with hyperthyroidism in the preoperative period. In 680 cases of hyperthyroidism in which

operation has been done at the New York Hospital in the past eight years, 16 died, 8 in "a typical thyroid crisis;" 6 of these 16 patients came to autopsy. The liver in all of these cases showed some pathological change; all exhibited moderate to marked amounts of yellow mottling; one a typical moderate nodular cirrhosis. The outstanding histological changes in these cases were: Large fat droplets diffusely distributed in the parenchymatous cells; central necrosis of the hepatic cords; moderate to marked degrees of connective tissue proliferation in the portal spaces, with accumulation of lymphocytes. A study of hepatic function by means of the plasma prothrombin test was made in 36 consecutive patients with hyperthyroidism (toxic diffuse and toxic nodular goiter) and in 34 control cases in which some type of operation was done (including 10 cases of nontoxic goiter, various abdominal operations, and 5 cases of operation on the brain). In the cases of hyperthyroidism in the preoperative period, the level of plasma prothrombin showed no direct correlation with the severity of the hyperthyroidism or duration of the illness; a slight rise in the prothrombin level was noted under preoperative treatment; but in 29 of the 36 cases there was a precipitate fall after operation, indicating "a severe degree of temporary hepatic impairment." The degree of the drop in the prothrombin level was closely correlated with the severity of postoperative symptoms; the fall in prothrombin occurred concomitantly with the rise in pulse rate and temperature, but the return of the prothrombin level to normal "lagged behind" the return of pulse and temperature to normal. Such a postoperative fall in plasma prothrombin was not observed in any of the control cases, although a postoperative rise in temperature occurred in several instances, especially following operation on the brain. On the basis of these findings, the authors suggest that in order to maintain hepatic function, the diet of patients with hyperthyroidism in the preoperative period should be high caloric, high carbohydrate, high protein, low fat, and supplemented with vitamin B complex.

COMMENT

In this article the authors remind us of the amount of liver damage and impairment of liver function in hyperthyroidism. Our attention is called to the amount of pathological change found in the liver in 16 patients who died and came to autopsy. The reference to the value of the plasma prothrombin test as a study of hepatic function in toxic goiter cases, particularly in the postoperative period, is impressive but not convincing. The authors' suggestions as to amount and character of the diet in the preoperative preparation of such cases, the caloric requirements, and the vitamin needs are quite in keeping with modern surgical thought and practice. The whole subject is never a closed one and any new idea or suggestion, even though it does not revolutionize present-day methods of treatment, nevertheless certainly tends to stimulate, encourage and challenge progress in our understanding and management of different medical problems.

T.M.B.

The Problem of the Common Duct Stone

J. H. WOOKEY (*Western Journal of Surgery, Obstetrics and Gynecology*, 49: 277, May 1941) notes that in recent years the necessity for exploration of the common duct for stone has been more widely recognized than previously. The absence of jaundice does not necessarily exclude the possibility of a common duct stone; the author has found repeated determinations of the icterus index of the blood serum of definite value in diagnosis. The index must be determined when the patient is relatively free from symptoms, within two hours after an attack of upper abdominal distress, and repeatedly thereafter to determine the general course of the index. In 5 cases in which there was no clinical evidence of jaundice, the icterus index rose from 8 and 9 to 15 and 16, and then returned to normal except in one case in which it increased to 33 (a case of common duct stone blocking the papilla of Vater). In 4 of these 5 cases a stone was found in the common duct at operation, and in the fifth case there was evidence that it had been "milked" into the duodenum by palpation before the duct was explored. If, at operation, the findings do not indicate clearly whether there is or

is not a stone in the common duct, the duct should be explored. With modern methods of preoperative care and biliary tract surgery, exploration of the common duct adds little to the risk of the gallbladder operation, but the consequences of an undetected common duct stone are "bad." In all such cases the author has made it his rule: "When in doubt, explore."

COMMENT

The question of exploring the common duct calls for careful judgment in the management of acute cholecystitis. Certainly in such a case one would have to be convinced before one opened the common duct. In the less acute and chronic cases surgeons are more frequently exploring the common duct in operations upon the biliary tract. Certain definite criteria have been recognized and set forth as sufficient reason to investigate the common duct. Improvement in surgical technique, more sensible preoperative preparation and modern anesthesia have minimized the risk of this addition to the operation; all of these things are essential and should be made available to the patient as well as adequate experience and skill in this field of surgery on the part of the operator. Then and then only should be accepted the dictum "when in doubt, explore."

T.M.B.

The Choice and Use of Cotton for Suture Material

S. A. LOCALIO and J. W. HINTON (*Surgery, Gynecology and Obstetrics*, 72: 615, March 1941) report the use of cotton as suture material in various types of major surgical procedures. Their studies have shown that autoclaving reduces the tensile strength of cotton, while boiling increases it, provided the cotton is used while wet. The cotton selected for surgical use should show the greatest tensile strength for the smallest diameter. The cotton suture material employed by the authors is wound on machine bobbins and sterilized by boiling ten to twenty minutes with the instruments. It may either be kept wet by immersion in sterile saline solution, but if it is allowed to dry, it must be wet just prior to use. For ligature of small vessels a No. 000 cotton (Handcraft), with a diameter of 0.007 inch; for larger blood vessels, cotton with

a diameter of 0.0075 to 0.0085 inch is employed; for suture of the peritoneum and fascia a cotton of 0.012 or 0.0115 inch diameter is employed; and the same size may be used for anastomosis. In using cotton for suture material the Halsted technique for "silk surgery" is followed. In the past five months, cotton has been used for suture throughout the operation in 50 major operations at the New York Post-Graduate Hospital, including gastric resections, colon resections, cholecystectomies and thyroidectomies. In 8 cases cotton was used in the presence of infection; wound complications developed in 3 of these cases, but healed without sinus formation in 2 instances. In all the other cases wound healing was "excellent." Because of the low cost of cotton, its use is of definite advantage in hospitals with active surgical services.

COMMENT

Current medical literature has been replete with articles having to do with wound closure and wound healing. A considerable amount of evidence has accumulated which in the absence of reports to the contrary would seem to indicate that the use of silk in the closure of operative wounds was the technic "par excellence."

Stainless steel wire as a material for suture and ligature has had its advocates. Now we have rediscovered cotton thread. At least in this case the material is readily available and is easily and quickly sterilized. The choice of size and variety is not so bewildering as is the matter of selecting the proper type and size of silk. Then, too, cotton is cheap, a virtue not to be too lightly regarded in this day and age.

Too much attention cannot be focused on wound healing. The actual material used in the closure of the wound is not the most important factor. Relatively its importance is insignificant, when considering all of the "essentials" in securing satisfactory healing. Nice discrimination and wise choice in the selection of any material, its size and tensile strength; strict adherence to established procedure in the use of ligatures and sutures; conscientious observance of the aseptic technic; delicate handling of tissues; complete hemostasis; adequate relaxation through modern methods of anesthesia—all of these things and nothing less will insure the best surgical results, regardless of the material selected. The fact is that silk and cotton will fail if strict adherence is not given to the prerequisites listed above. It is incumbent upon the proponent of catgut in wounds to follow the same

meticulous technic, if he hopes to hold his own in a statistical review.

T.M.B.



Mortality in Surgery of the Prostate

S. A. VEST (*Journal of Urology*, 45: 439, March 1941) reports a series of 365 consecutive operations for the relief of prostatic obstruction at the Brady Urological Institute of Johns Hopkins Hospital; the mortality in this series was 1.6 per cent. All of these patients were treated in the public wards, and the majority were considered poor surgical risks. In 233 cases prostatectomy was done; perineal prostatectomy was the method of choice, the suprapubic operation being done in only 12 cases because of vesical calculus, etc. In 112 of these cases (48 per cent.) acute urinary retention was present on admission or the patient had just been catheterized to relieve acute retention; chronic retention was present in 6 per cent. In 103 cases (40 per cent.) there was evidence of considerable impairment of renal function as determined by the phenol-sulphonphthalein test; 62 patients showed increased blood urea; the urine was infected in 60.5 per cent. Medical complications were relatively frequent, and high blood pressure (over 150 systolic) a common finding, occurring in 48 per cent. of these cases. There were 3 deaths in this series of prostatectomies, a mortality of 1.2 per cent. In 132 cases in which the obstructing tissue was of relatively small amount (small lateral lobes or median bars), transurethral resection was done; there were 3 deaths in this series, a mortality of 2.2 per cent. During the period in which these operative procedures were carried out, 19 patients were admitted to the wards with benign obstruction of the

vesical orifice; 4 refused the operation which was advised; in the other 15 cases operation was not considered necessary, as symptoms were mild and there was no residual urine. In the same period, 26 additional patients with prostatic obstruction were admitted, who died before operation could be performed; 20 of these patients were "in such critical state" that death was inevitable regardless of what type of treatment was instituted. The other 6 patients were also in "extremely poor condition," but it is possible that they might have been brought to operation by some method of treatment other than that employed. The mortality of 1.6 per cent. for 365 operations for prostatic obstruction is much lower than that reported for public ward patients from other hospitals. This low mortality, the author believes, is due to the preoperative and postoperative care according to the methods advocated by Young and his associates, and to the use of perineal prostatectomy in the cases where prostatectomy was indicated. Preoperative care included catheter drainage, suprapubic cystotomy being avoided as far as possible; and the treatment of cardiac and other medical complications. Perineal prostatectomy, the author states, is "a safe and surgically sound method of treating moderate and large sized hypertrophies."

COMMENT

This admirable article dresses in newer garb the established points that mortality depends on previous condition, as the measure of resistance; on preoperative care, as the measure of reaction; on gentleness and skill at operation, as the measures of avoiding shock; and on prolonged aftercare, as the measure of combating late complications. All these points can not be reiterated too often.

V.C.P.

Sulfathiazole and the Staphylococcus in Urinary Infections

G. CARROLL, L. KAPPEL and B. LEWIS (*Journal of Urology*, 45: 770, May 1941) note that in the urinary tract staphylococci may cause abscess in or about the kidney and are frequently the cause of pyuria associated with renal, ureteral or bladder calculus. The diagnosis of

renal abscess may be obscured by the presence of clear urine; but careful microscopic examination and culture of the urine will show the presence of staphylococci; "close scrutiny" of the pyelogram will confirm the diagnosis. Staphylococcus infection associated with urinary calculus may be the cause of recurrence of the stone, unless it is effectively treated. In the treatment of 25 cases of staphylococcus infection of the urinary tract, treated with sulfathiazole, the usual dose of the drug was 4 gm. daily given by mouth. A study of the absorption and excretion of the drug with this dosage showed that 90 per cent is eliminated in the urine; variations in the blood concentration of the drug were found to be due more to differences in elimination than to differences in absorption. If renal function was good the drug was excreted promptly and the blood concentration dropped rapidly; in such cases, the dosage of sulfathiazole may be "materially increased" if necessary to combat the infection successfully. High concentrations of sulfathiazole in the blood were found in patients showing increased non-protein nitrogen and renal lesions interfering with elimination. Toxic symptoms were noted in 15 per cent of the cases studied, occasionally making it necessary to discontinue the drug. Skin eruptions and a peculiar type of episcleritis were most common; diarrhea also occurred. The most serious deleterious effect of the drug in the urinary tract is deposition of "whitish concretions" in the tubules, calices and pelvis of the kidneys; this can be combatted by forced fluids by mouth or intravenous glucose. Of the 25 cases of staphylococcus infection of the urinary tract treated with sulfathiazole, all but 3 recovered completely, i.e., were entirely relieved of symptoms with sterilization of the urine; 2 showed definite improvement, only one no result. Patients under treatment with sulfathiazole should be under careful supervision, with special attention to the skin, the eyes, and the urine.

COMMENT

In addition to the toxic results in the skin, eyes and urine as warnings is the measure of dosage as determined by the rapidity and

completeness of elimination by the kidneys. The new urinary antiseptics are multiplying so fast that confusion as to merits is occurring. Since 90% of sulfathiazole is eliminated in the urine it may become one of the best.

V.C.P.

The Effect of a Carbonated Beverage on the pH of the Urine

C. A. BOWERS (*Urological and Cutaneous Review*, 45: 161, March 1941) has made a special study of the effect of various carbonated beverages on the pH of the urine, because from time to time he has found it impossible to alkalinize the urine of patients who drank several glasses of a cola beverage daily. In a few other cases it was found impossible to acidify the urine of patients who drank other types of carbonated beverage regularly. A study of the composition of various carbonated beverages, in relation to their alkalinizing or acidifying effect, showed that this depended on the type of acid used in their preparation. If this is an easily oxidizable acid such as citric acid, the beverage may act as an alkalinizer; if it is phosphoric acid (as in the cola beverages), the beverages produce marked acidification. A case is reported in which it was desired to acidify the urine after removal of a calculus because of the presence of urea splitting organisms, chiefly proteus, in the urine. The usual methods for acidification of the urine proved ineffectual, and the calculus recurred. After the removal of the second calculus, a "rigid routine" for acidification of the urine was followed, but the urine could not be acidified until the patient was advised to drink four or five bottles of the cola type beverages daily; this resulted in an acid urine and relief of urinary symptoms within a week. Further studies are being made to determine to what extent carbonated beverages of various types can be used to assist or may interfere with the usual procedures employed for acidification and alkalinization of the urine.

COMMENT

Two features are prominent in this study. First, that self-medication with mineral waters and the like resembles all self-treatment in having results none too good. Second, that

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these results seem to challenge but do not disprove the fact that intravenous injections are the surest means of raising blood alkalinity.
V.C.P.

Air Pyelography

O. GRANT and R. LICH (*Annals of Surgery*, 113: 865, May 1941) report the use of air pyelography in the diagnosis of certain urinary tract lesions. A Luer syringe (10 cc.), fitted with an "adapter" containing cotton to filter the air, is used for injection of the air. The catheter employed is of small size, preferably a No. 5 F, and is introduced so that it lies in the kidney pelvis and does not impinge on any renal tissue. The air is injected slowly at a pressure which does not exceed 30 mm. Hg; a manometer may be used, but the authors have found that after a little practice, the operator can easily estimate the pressure employed. The patient is in the erect or semi-erect posture so that the air ascends readily. If 10 cc. of air can be introduced without causing discomfort, this amount is injected before the roentgenogram is made; but whenever the patient complains of pain or a sense of fullness in the back the roentgenogram is made before any more air is introduced. Air pyelography should not be used in any case in which retrograde pyelography is contraindicated or in cases of frank, marked renal hematuria. The authors do not employ air pyelography as a routine in preference to opaque media, but they have found it of greatest value in calculous disease of the kidney. In such cases it makes possible the accurate localization of small stones or fragments of large stones often obscured by the opaque medium. The air is rapidly absorbed, and may be left in an obstructed pelvis for the diagnosis of an occlusion, aberrant renal vessel, or ureteral kink, "with impunity." The authors have never seen any untoward effect from air pyelography with the technique described; but it has been found to be less irritating to the patient and to cause less postoperative reaction than the use of opaque media.

COMMENT

Memory turns back hardly less than thirty years to the injection of air through a needle

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into the zones about the kidney for x-ray diagnosis. So many crises, with or without death, occurred that after about two years the method was rejected. About a year ago I found and burned part of my own old outfit. I am reactionary enough to challenge air pyelography as not wise, on account of the foregoing record.

V.C.P.

Hodgkin's Disease of the Bladder

R. PHILLIPS (*Lancet*, 1: 480, April 12, 1941) reports that in "several hundred" cases of Hodgkin's disease treated at St. Bartholomew's Hospital (London), there was only one case with symptoms of bladder involvement. In 1937, Lebowich reported one case of Hodgkin's disease of the bladder (*Am. J. Cancer*, 30: 758, 1937) and collected 5 other cases from the literature. But in none of these cases was the bladder involvement diagnosed and treated during life. In the case reported by the author, the first symptom noted was enlargement of the cervical glands. A month later a rash developed on the lower extremities, and shortly afterwards frequency of micturition was noted. By the end of the second month the patient felt the urge to micturate hourly day and night; the end of the act of micturation was accompanied by pain and a yellow discharge; just before admission to the hospital in the third month he passed a few drops of blood. At the time of admission, he showed typical symptoms of Hodgkin's disease with involvement of the cervical, axillary and mediastinal lymph glands; cystoscopic examination showed the mucous membrane of the bladder "studded" with grayish-yellow nodules with some submucosal hemorrhages. After x-ray therapy of the thorax and neck had been instituted resulting in marked general improvement, ten daily doses of 140 r each were given to the bladder. This resulted in complete relief of the urinary symptoms, and three months later cystoscopy showed the bladder mucosa to be normal. As far as available reports indicate, this is the first case in which Hodgkin's disease of the bladder has been successfully treated.

COMMENT

As a question of diagnosis this case is unique and the author is to be congratulated. As a matter of cure this case is exceptional because usually Hodgkin's disease means decrease. Intensive and carefully balanced x-ray treatment certainly offers much hope to some cases. I recall, however, one of my own patients who perished in a few months, notwithstanding regular x-ray service.

V.C.P.



Amino-Acids as a Source of Nitrogen for Allergic Infants

L. W. HILL (*Journal of the American Medical Association*, 116: 2135, May 10, 1941) reports the use of a synthetic protein-free food, in which amino acids prepared from hydrolyzed casein were the chief source of nitrogen, in feeding 36 eczematous infants, most of whom gave positive cutaneous reactions to milk. The composition of the food employed was amino acids, 20 per cent., dextrimaltose 42.3 per cent., virgin olive oil 18 per cent., arrowroot starch 10 per cent., brewers' yeast powder 3 per cent. and mineral salts 6.7 per cent. One level tablespoonful of this food contains 38 calories; for feeding four tablespoonfuls are mixed with 6 ounces (180 cc.) of water. The diet was well taken by most infants (under one year of age). In some cases, although cutaneous reactions to milk were positive, there was no improvement in the eczema when the milk-free food was employed. In other cases the improvement was marked and rapid, and the eczema recurred if milk was resumed, and disappeared again when a return was made to the milk-free food. In the 36 cases treated satisfactory results were obtained in 19, unsatisfactory results in 9, and "inconclusive results" in 8. In the cases with satisfactory results, the

eczema improved, the infant took the food well and showed a satisfactory gain in weight. This synthetic food, the author maintains, has some advantages over other milk-free foods; but no milk-free food is "entirely without disadvantages," and more than one type of such food should be available for infants definitely allergic to milk.

COMMENT

Any infant or child afflicted with a milk allergy presents a serious problem for the physician to solve. The more sound substitutes available, the greater the chances for finding a satisfactory solution. To date those available are: goat's milk, hypoallergic milk, sobee, and mulsoy. Now Hill gives us another which I hope will prove of extreme value after it has had a chance to stand the test of time. At any rate we know that the work of Hill is always scientifically and clinically sound.

O.L.S.

Sulfathiazole Therapy in Infantile Diarrhea

GRANT TAYLOR (*Journal of Pediatrics*, 18: 469, April 1940) reports the use of sulfathiazole given by mouth in the treatment of parenteral diarrhea or bacillary dysentery in children. Of 27 children admitted to the hospital with diarrhea, 13 were treated with sulfathiazole; the 14 controls were not given sulfathiazole on admission; 6 of them, however, were given the drug in the late course of the disease. Otherwise, the treatment in the two groups was identical. The patients in the two groups were comparable as to age, sex, severity and type of infection and other clinical and laboratory findings. In the group treated with sulfathiazole, the average time required for the stools to reach four a day of normal color and consistency was 3.2 days; in the control group, 15.6 days. No deaths occurred in the sulfathiazole-treated group; 2 children in the control group died, one nine hours after admission, the other after a protracted course of twenty-seven days. In the group treated with sulfathiazole, the duration of the disease after treatment was instituted "bore no relation" to the duration before admission to the hospital, but in the control group recovery was delayed in those

patients who had had prolonged diarrhea before admission to the hospital. The initial dose of sulfathiazole was 1 gm. (gr. xv) per year of age up to a maximum of 3 gm.; subsequently the same amount was given daily in divided doses (6 doses). There was no untoward reaction in the cases in which sulfathiazole was given when treatment was first instituted. In one of the patients given sulfathiazole later in the course of the disease (0.9 gm. on the fourth day of treatment), a previously existing jaundice became slightly increased; the drug was immediately discontinued, but the jaundice persisted for several days; as multiple transfusions had been given in this case previous to the administration of sulfathiazole, the drug "may not have been responsible for the increase in the jaundice." This patient, a girl four months of age, died on the twenty-seventh day of the disease. Her twin brother who showed the same type of infection (Flexner Z), and was also "acutely ill" on admission was in the group treated with sulfathiazole; his temperature became normal in twenty-four hours, and stools normal in number and consistency on the sixth "hospital day." From his observation in these cases, the author concludes that "sulfathiazole is effective in the treatment of children with parenteral diarrhea or bacillary dysentery, particularly the latter."

Favorable End Results in Icterus Gravis Neonatorum

I. P. SOBEL (*Journal of Pediatrics*, 18: 621, May 1941) notes that many infants with icterus gravis neonatorum can be saved by modern methods of therapy who would otherwise have succumbed to the disease. Various types of neuromuscular dysfunction have been reported to develop in children who recover from icterus gravis occurring in the neonatal period, which are considered to be due either to nuclear jaundice or cerebral damage caused by intracerebral hemorrhage. Zucker and the author have found that the most characteristic sequela of icterus gravis neonatorum is a tetralogy consisting of opisthotonus, choreo-athetosis, extrapyramidal spasticity and mental defectiveness. If such sequelae

were to follow effective therapy in the neonatal period, the value of such therapy would be questionable. That this is not the case is indicated by the 2 cases reported by the author. One of these cases was a "classical example" of icterus gravis neonatorum; the other was somewhat less typical in that excessive erythroblastemia was not present, but the intensity of the jaundice and the other characteristic symptoms justified the diagnosis of icterus gravis. In both these cases, repeated blood transfusions resulted in rapid improvement in the jaundice and other symptoms. These 2 infants have been under careful supervision for six and a half and seventeen months respectively; both are entirely normal physically and mentally. One "successfully withstood" a severe attack of pneumonia at the age of thirteen months. Active therapy of icterus gravis neonatorum during the neonatal period is, therefore, of real value, since a normal infant "may be the reward of successful treatment." The author also suggests that if more healthy infants cured of icterus gravis develop normally to "reach the reproductive period," more data can be accumulated to test the hypothesis of the hereditary nature and mendelian transmission of the disease.

Jaundice in Infants and in Children

M. REINER and S. B. WEINER (*American Journal of Diseases of Children*, 61: 752, April 1941) determined the icteric index of the blood serum by both the water and the acetone method in jaundice of various types in infants and children. In all types of hemolytic icterus the results obtained by the two methods were practically equal; thus the ratio of the icteric index by the water method to that by the acetone method was 1:1. In nonhemolytic jaundice (catarrhal jaundice, cirrhosis of the liver, etc.), the icterus index by the water method was definitely greater than that by the acetone method, the ratio varying from 1.7:1 to 4.6:1. According to the findings in cases of icterus gravis, this disease is of the hemolytic type. The determination of the icterus index by these two methods and the ratio of one to

the other was found to be of definite value in diagnosis as indicating whether the jaundice was of the hemolytic or the non-hemolytic type.

Enlargement of the Thyroid Gland in Juvenile Patients with Diabetes Mellitus

M. M. STEINER and ALVAH L. NEWCOMB (*American Journal of Diseases of Children*, 61: 458, March 1941) report 2 cases of diabetes mellitus in children (both girls) associated with hyperthyroidism. In both these cases the onset of diabetes occurred at about the same age and the thyroid gland became palpably enlarged early in the course of the diabetes; in both cases, also, the mother of the patient had been subjected to thyroidectomy. In both the diabetes could not be completely controlled by diet and insulin and the insulin requirement steadily increased (up to 134 units daily in one case). These findings led the authors to study the incidence of a definitely palpable thyroid gland in 128 juvenile diabetic patients at the Children's Memorial Hospital (Chicago, Ill.). A palpable thyroid was found in 26, or 20 per cent. of these diabetic patients; a study of the family histories showed that 50 per cent. of the diabetic children with palpable thyroid had a family history of diabetes, and 80 per cent a family history of thyroid disease; while in the diabetics with normal thyroid, there was a family history of diabetes in 19 per cent, and a family history of thyroid disease in 12 per cent. But unless hyperthyroidism was present (as in the 2 cases reported), the enlargement of the thyroid gland did not appear to influence either the onset or the course of the diabetes. A third case of hyperthyroidism in a girl ten years of age is reported in which glycosuria and lowered glucose tolerance suggested the possibility of diabetes, especially as there was also a family history of diabetes. However, the dextrose tolerance improved on a high caloric diet with rest and the administration of iodine without insulin, and glycosuria and hyperglycemia completely disappeared after subtotal thyroidectomy. This patient may subsequently develop diabetes, because of the

familial tendency to the disease, but "the elimination of the hyperthyroidism" will probably "lessen the chance of development of juvenile diabetes." Since the disturbance of carbohydrate metabolism in hyperthyroidism may simulate that in diabetes mellitus, careful study is necessary to avoid errors in diagnosis or overlooking diabetes "as a complicating factor."

Vitamin E in the Treatment of Muscle Disorders of Infancy and Childhood

SIMON STONE (*Journal of Pediatrics*, 18: 310, March 1941) has previously reported the use of vitamin E (wheat germ oil) in the treatment of muscular dystrophies in children, and in one case of subacute poliomyelitis and polyneuritis. In this paper he reports 4 cases of muscle disorders in children treated with vitamin E, together with the vitamin B complex; 2 are cases of pseudohypertrophic muscular dystrophy and 2 of myotonia congenita. One of the patients with pseudohypertrophic muscular dystrophy has recovered with "replacement of the dystrophic musculature by normal tissue" after six months' treatment with wheat germ oil (vitamin E) and vitamin B complex; some lordosis is the only residual sign. The other patients do not show complete recovery but definite improvement with "formation of new muscle tissue" and "generalized increase in strength." The dosage of vitamin E in such cases is 2 to 4 cc. of fresh wheat germ oil daily plus vitamin B complex. Vitamin E, the author concludes, is important for muscle growth in infancy and childhood; since most infantile diets are likely to be deficient in this vitamin, it is suggested that the possibility of vitamin E deficiency should be investigated in "certain obscure nervous and muscular disturbances of infancy and childhood."

EDITORIALS

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legging would be called for. Snuff would seem to furnish a perfect basis for the needed strategy.

The late Raymond Pearl of Johns Hopkins University believed that the great majority of the people desired prohibition

—Concluded on page 330

HYPERTENSION

—Concluded from page 299

velops in the remaining kidney. The diagnosis of an intrarenal pelvis, as a condition which predisposes to hypertension, should be of particular interest to insurance examiners as well as to the family physician. Focal infections such as abscessed teeth, tonsillitis, prostatitis, endocervicitis, sinusitis, etc., which may cause renal infections, should be given greater consideration and perhaps eradicated early when they occur in individuals with an intrarenal pelvis. When obstruction or infection and hypertension have already developed, decapsulation or other plastic operations at the kidney hilum may often improve an otherwise hopeless condition.

Summary

A KIDNEY pelvis of the fetal type, i.e., an intrarenal pelvis which is almost completely surrounded by renal tissue, predisposes to hypertension. Enlargement of the intrarenal pelvis due to obstruction or infection compresses the neighboring renal vessels and leads to renal ischemia and hypertension. Excretion urography is of utmost importance in the diagnosis, prognosis and treatment of "essential" hypertension. In addition, it is possible by this diagnostic procedure to determine at an early period those individuals who are most likely to develop hypertension. 101 Lafayette Avenue.

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Mention that you saw it in

Medical Times

MEDICAL TIMES, JULY, 1941

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All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

Joslin's Manual

A Diabetic Manual for the Mutual Use of Doctor and Patient. By Elliott P. Joslin, M.D. Seventh edition. Philadelphia. Lea & Febiger, [c. 1941]. 238 pages, illustrated. 12mo. Cloth, \$2.00.

THE latest edition of this manual, which was the first of its kind for the instruction of the diabetic patient, follows the plan of previous editions. It furnishes fuller instruction than other books of its type, and for the intelligent reader remains the best. The history of the disease and of insulin is told. Questions and answers follow. Diabetic arithmetic is clarified by illustrations and tables.

The author is convinced that a diabetic whose disease is controlled with carbohydrate 150 grams in his diet, plus insulin, is less likely to grow old prematurely than when controlled with carbohydrate 100 grams and no insulin.

Crystalline insulin, sold as "solution of

zinc insulin crystals," is stated to act as promptly as regular insulin, to persist for an hour or so longer, to be purer, to cost

no more, and to have replaced regular insulin when the short acting product is used. Protamine zinc insulin is the main standby in treatment except to bring a patient out of coma. Other chapters deal with surgery in diabetes, pregnancy and heredity. The value of the book is well known to all.

WILLIAM E.
MCCOLLOM



JOHN CHEYNE
1777 ~ 1836

Classical Quotations

• For several days his breathing was irregular; it would entirely cease for a quarter of a minute, then it would become perceptible, though very low, then by degrees it became heaving and quick, and then it would gradually cease again: this revolution in the state of his breathing occupied about a minute, during which there were about thirty acts of respiration.

John Cheyne.

Dublin Hospital Reports, 2:222, 1818.

Sutton's Skin Diseases

An Introduction to Dermatology. By Richard L. Sutton, M.D., and Richard L. Sutton, Jr., M.D. Fourth edition. St. Louis. C. V. Mosby Co., [c. 1941]. 904 pages, illustrated. 8vo. Cloth, \$9.00.

THIS edition, like the previous ones, is a condensation of the larger book *Diseases of the Skin* by the same authors. It has been enlarged and is much more profusely illustrated. A

bibliography has been added, which is unusual in a book of this type.

The subject matter is excellent and complete. It adequately describes most of the rare skin diseases. The authors emphasize many forms of treatment with which they personally have had results.

The book is suitable for any medical student or physician except the specialist who needs complete information on a dermatological subject and even this extensive data could be obtained by reference to the bibliography and current literature. Altogether, it fulfills its purpose admirably, and it can be heartily recommended.

JOHN C. GRAHAM

Male Adolescence

A Boy Grows Up. By Harry C. McKown and Marion LeBron. New York, McGraw-Hill Book Company, [c. 1940]. 299 pages, illustrated. 8vo. Cloth, \$2.00.

THIS is a book for the adolescent boy about himself. It may be safely recommended to parents and teachers for boys of teen age as a guide and aid in understanding their problems. Through this means, an attempt is made to make the adolescent boy a self reliant individual socially, morally, and physically.

STANLEY S. LAMM

A Woman Doctor's Saga

Mine Eyes Have Seen. A Woman Doctor's Saga. By Alfreda Withington, M.D. New York, E. F. Dutton & Company, [c. 1941]. 310 pages, illustrated. 8vo. Cloth, \$3.50.

IT IS only fair that we should have a woman doctor's saga along with the many books of the same sort written by medical men.

The late plethora of medical autobiographies has duplicated the plethora of sex books that descended upon us some time ago. Pending the subsidence or cessation of this new plethora it is a pleasure to welcome one of the really notable contributions to this type of literature—notable among other things for its obvious authenticity, something not always a dominant feature of these autobiographies. The

experiences recorded in this book are not less interesting because not imagined. All hail, completely honest autobiography!

At all crucial points in a successful career resistance to the "woman doctor" because of her sex was encountered. In America it was symbolized by Thomas Addis Emmet, in Europe by Billroth, with both of whom Dr. Withington collided. This, of course, was over fifty years ago

(Dr. Withington is now in her eighties). But one can see how such resistance developed only the greater determination in a person of character and of great native and trained ability. So on Dr. Withington went through the Old World centers of study, to practice in Pittsfield (and presidency of her County

Medical Society), to work and adventure in Labrador with Sir Wilfred Grenfell (who wrote this book's Introduction), to service in France during and after the First World War, and finally to the remote Kentucky mountains for general (horseback) practice of the most gruelling kind among the feudists and distillers.

Plainly a most worthy disciple of Æsculapius and a sister to be proud of.

ARTHUR C. JACOBSON

Getting The Child To Eat

Feeding Our Old Fashioned Children. A Background for Modern Mealtimes. By C. Anderson Aldrich, M.D. and Mary M. Aldrich. New York, The Macmillan Company, [c. 1941]. 112 pages, illustrated. 8vo. Cloth, \$1.75.

THIS is a book for parents who have feeding problems with a child. The authors approach the subject in a commonsense manner. They state that there is a wide margin of safety in the amount of food, even types of foods that a child consumes. If not fussed with, children usually adjust themselves, provided there are no physical handicaps. Too much stress is often placed on the proverbial quart of milk daily; also high cream diets as well as Vitamin B. The removal of tonsils with the hope that the feeding problem will thereby disappear very often

proves futile. Also, too much attention is paid to height and weight averages as an index to good health.

It is an excellent book for families who need such a psychological straightening out.

THURMAN B. GIVAN

A Bacteriological Guide

Methods for Diagnostic Bacteriology. A Complete Guide for the Isolation and Identification of Pathogenic Bacteria for Medical Bacteriology Laboratories. By Isabelle G. Schaub, A.B. and M. Kathleen Foley, A.B. St. Louis, The C. V. Mosby Company, [c. 1940]. 313 pages. 8vo. Cloth, \$3.00.

THIS is a volume for lay and professional technical workers, a manual for pathogen identification in use at the Johns Hopkins Hospital and School of Medicine. It is divided into three parts, bacteriological diagnosis, serological diagnosis of bacteria, and a section devoted to formulas, particular methods, and tests. The material is exceptionally complete, lucid and is practical to "fool-proof" usefulness. Marginal space and blank opposing pages for notes add to the size but also to the continuing worth of the volume. No explanations or discussions are furnished, but the content is detailed and time tested. Numerous shortcut and "tricks-of-the-trade" examples gained usually only through long experience are noteworthy. General usage of the book may further the authors' plea for standardized procedures. Certainly any owner will be given a valuable and explicit guide for experienced and standard bacterial diagnosis.

IRVING M. DERBY

Sex Perversion

Masochism in Modern Man. By Theodor Reik. Translated by Margaret H. Beigel and Gertrud M. Kurth. New York, Farrar & Rinehart, Inc., [c. 1941]. 439 pages. 8vo. Cloth, \$4.00.

THIS book represents an approach to the problem of Masochism evolved after prolonged study by a close friend and former associate of the late Sigmund Freud. In a thorough and most fascinating manner the author presents by significant case histories and detailed analysis his concept of the underlying mechanisms concerned in Masochism in Man. The book is well

written, the text very readable and interesting. It should find a place in the library of all those seeking information and attempting to clarify the mysticism and confusion long held regarding this subject.

A. M. RABINER

Dr. Rosser of Texas

Doctors and Doctors: Wise and Otherwise. On the Firing Line Fifty Years. By Charles M. Rosser, M.D. Dallas, Mathis, Van Nort & Company, [c. 1941]. 8vo. Cloth, \$3.50.

DR. ROSSER was once introduced to a public audience as "A man who had been more criticized for his aggressive work with the public, for the advancement and recognition of high ethical and scientific standards, than any other man I have known to survive." It is evident from the above that the life of the author was a full and an active one both as a physician and surgeon and as a public servant.

The son of a poor Methodist minister, —one of the Virginia Rossers,—he pioneered, in 1865 as a baby, with his family to Texas, and later settled in Dallas to practice his profession. In Dallas he identified himself with those interested in the educational aspects of medicine, and was a prime mover in the establishing of the Medical School of Baylor University in Dallas. He later served in this medical school as Professor of Clinical Surgery. He was honored, in time, with the presidency of the Texas State Medical Society, the Medical Association of the Southwest and held office in other professional societies.

It would seem as if Dr. Rosser was rather opinionated and made many friends and foes by sponsoring movements, by his activities in prohibition days, and by his campaigning against the quacks. Once, because of newspaper notoriety in connection with lay addresses, he was even accused of unethical behavior. Be all that as it may, Dr. Rosser was evidently on terms of real personal intimacy with the contemporaneous high lights of surgery, the Mayos, Murphy, Deaver, and speaks feelingly of them all.

One of the outstanding attributes of

Dr. Rosser in his ability as a public speaker and orator, many of his addresses being quoted verbatim in the context or in the addendum; one, in particular, the address at the unveiling of the statue of Dr. W. E. B. Davis, founder-secretary of the Southern Surgical Association, showing his mastery of this art. Dr. Rosser has included some discussions of ethics, organized medicine, state medicine, and tells the story of the fight for the passage of the Medical Practice Act of Texas. All interesting reading for the doctor and for the layman, the last eight pages of the book are devoted to two interesting case reports of successful surgical procedures and may well have been omitted.

J. RAPHAEL

Stander's Latest Revision of Williams Obstetrics

Williams Obstetrics: A Textbook for the Use of Students and Practitioners. By Henricus J. Stander, M.D. Eighth edition. New York, D. Appleton-Century Company, [c. 1941]. 1401 pages, illustrated. 4to. Cloth, \$10.00.

THE eighth edition lives up to the high standards set by this recognized text-book of obstetrics in previous editions. The book has been changed considerably. Three new chapters have been added, old ones rewritten and rearranged, and the major recent advances included.

The new chapters include "Diseases and abnormalities of the newly born child," "Classification of abnormal and contracted pelves" and "Sudden death and maternal mortality." The chapter on the fetus includes the newer work on intrauterine respiratory movements.

In the section on the pathology of pregnancy the work of Joslin and his associates on the rise of prolan during diabetes and its practical importance in the prevention of intrauterine death of the fetus is discussed. The newer concepts of chemotherapy in the treatment of pneumonia, gonorrhea, erysipelas, pyelitis as well as puerperal infection have been considered.

The new classification of toxemia proposed by the American Committee on Maternal Health is followed in the text. Low reserve kidney is discarded as an entity and is included in the group designated as mild pre-eclampsia.

The new chapter on contracted pelves discusses much of the work of Thoms, and Caldwell and Moloy. New classifications are described as well as the use of the precision stereoscope in the problem of border-line cephalo-pelvic disproportion, an epoch making advance.

The importance of blood transfusion and the use of the blood bank, recently instituted at the New York Hospital, is emphasized by the author. Throughout the text he has included much of the work of his staff and experience at his hospital.

The illustrations have undergone great change. Many new ones have been added and old ones reproduced darker and clearer. Many old diagrammatic or sketched illustrations have been replaced by actual gross or microscopic photographs showing the same conditions in a more lifelike fashion.

This latest edition merits and should continue to enjoy the popularity that the book has long held.

ALEXANDER H. ROSENTHAL

A Manual for Men Nurses

Textbook for Male Practical Nurses. By Gayle Colman, R. N. New York, Macmillan Company, [c. 1941]. 215 pages, 12mo. Cloth, \$2.00.

EARLY chapters describe hospital organization, ward units and furnishings, procedure of admission and discharge of patients, and description of beds and appliances.

Instructions are given on the various nursing procedures, and the care of genitourinary cases receives special attention.

The book is clearly written and satisfactorily furnishes much practical information.

W. E. MCCOLLUM

Epilepsy and Migraine

Science and Seizures. New Light on Epilepsy and Migraine. By William G. Lennox, M.D. New York, Harper & Brothers, [c. 1941]. 258 pages. 8vo. Cloth, \$2.00.

THIS book concerns itself with the subject of epilepsy. Although written for the lay person, it should be of interest to all physicians, as it brings up to date recent advances in this field. The subject of

electro encephalography is especially well presented. There are also interesting chapters on migraine and education of the public with respect to optimum medical care.

The book has an appendix referable to the literature on seizures.

The reviewer recommends the work highly.

STANLEY S. LAMM

A Mental Nursing Text

A Textbook of Psychiatry. By Arthur P. Noyes, M.D. and Edith M. Haydon, R.N. Third edition. New York, The Macmillan Company, [c. 1940]. 315 pages. 8vo. Cloth, \$2.50.

THE general character of the previous edition is retained in this which more elaborately stresses therapeutic nursing procedures. The superintendent of nurses at St. Elizabeth's Hospital has collaborated with Dr. Noyes in the preparation of the volume. The practical viewpoint of such aid enhances the completeness of principles and techniques surveyed. A concise chapter of the history of psychiatry and psychiatric nursing is new. Present day responsibilities in mental hospital nursing are admittedly exacting. This book most satisfactorily provides the necessary background for capable specialized nursing. It is an up-to-date practical text for the student or postgraduate nurse and is recommended for medical beginners in psychiatric practice.

IRVING M. DERBY

Another Edition of Loewenberg's Diagnosis

Medical Diagnosis and Symptomatology. By Samuel A. Loewenberg, M.D. Fifth edition. Philadelphia, F. A. Davis Company, [c. 1941]. 1139 pages, illustrated. 4to. Cloth, \$12.00.

THIS textbook appears in a complete change in the format, because of the recent advances in diagnostic procedures and the progress of medicine generally.

The new material consists of a Section on General and Local Symptomatology, and chapters on Vitamins and Vitamin Deficiency Diseases, Allergy, its Clinical Manifestations and Diagnosis, and Geriatrics.

Endocrinology and diseases of the Blood-Making-Organs, and the newer developments in these fields are thoroughly

discussed.

The examination and diseases of the cardiovascular system have been revised. There is a new section on Laboratory Procedure which includes the significance of chemical tests, functional tests, serologic tests, and complement fixation tests, also blood grouping, sugar tolerance, basal metabolism tests, and other diagnostic aids.

The illustrations are good, and diagnostic tables, and differential tables, have been added. Such valuable textbooks as this one, would be of better service were they set-up in a loose-leaf edition, because of the rapid changes and procedures in medicine. This would obviate the large number of new editions, because the first edition by this author appeared in 1929, and the book has already been revised for the fifth time.

MAURICE J. DATTELBAUM

More International Clinics

The New International Clinics. Original contributions: Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume 1, New Series 4. Philadelphia, J. B. Lippincott Company, [c. 1941]. 304 pages. 8vo. Cloth, \$3.00.

THIS present number of the "Clinics" is one of the best to appear in some time, chiefly because of an excellent paper on Inferior Vena Cava Obstruction by Ferris of Cincinnati; a very fine resume of recent advances in "curable" heart disease by Geiger of New Haven; a very appropriate critique of capillary fragility by Heinemann of New Haven; and a timely comment on skin eruptions and falsely positive Wassermann reactions in infectious mononucleosis by Sadusk also of Yale.

ANDREW W. BABEY

New Edition on English Anaesthetics

Handbook of Anaesthetics. (Formerly Ross and Fairlie). Revised by R. J. Minnitt, M.D. Fifth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 364 pages, illustrated. 12mo. Cloth, \$4.00.

THE first edition of Ross and Fairlie, published many years ago, would probably not recognize its present fifth edition and revision. The original authors are gone, and its present revision by an up-to-date anesthetist carries little more than

the shell of the 1st work. Such is the advance of anesthesia in one generation. What sounds familiar to the older anesthetist are instructions in the principles of safe, efficient administration; the physiological concept has changed entirely; the newer drugs, both for inhalation and regional use, have made a new art and science.

The difference in viewpoint between American and British anesthesia is well illustrated by the fact that the author gives twenty pages to the discussion of chloroform, whereas in this country it would be mentioned only to be condemned. However the parting word is that chloroform should be used only if no other form of anesthesia is applicable.

As a handbook it does not discuss theories to any great extent, but is filled with good practical advice for the man who wants to learn how to give anesthesia well and to avoid pitfalls which interfere with that end. Chapters on vinethene, cyclopropane, carbon dioxide absorption, therapeutic use of helium, oxygen and carbon dioxide, and chapters on local and spinal anesthesia have been brought up to date.

We end by quoting a paragraph which seems to sum up the entire book. "It should be remembered that an anesthesia must be as safe as possible from every point of view. It is improper to incur more risk to life than is necessary."

GEORGE W. TONG

BOOKS RECEIVED *for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.*

Modern Drugs in General Practice. By Ethel Browning, M.D. Baltimore, Williams & Wilkins Company, [c. 1940]. 236 pages. 8vo. Cloth, \$3.00.

Aids to Anatomy (Pocket Anatomy). By Edward P. Stibbe, F.R.C.S. Tenth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 369 pages, illustrated. 16mo. Cloth, \$1.50.

Physical Medicine. The Employment of Physical Agents for Diagnosis and Therapy. By Frank H. Krusen, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 846 pages, illustrated. 8vo. Cloth, \$10.00.

The Development of the Sciences. Second Series. Edited by L. L. Woodruff. New Haven, Yale University Press, [c. 1941]. 336 pages. 8vo. Cloth, \$3.00.

Health and Longevity. By Charles M. Baird. Boston, The Christopher Publishing House, [c. 1941]. 157 pages. 8vo. Cloth, \$1.75.

Health: Mental, Moral and Physical. By Horace W. Soper, M.D. Boston, The Christopher Publishing House, [c. 1941]. 109 pages. 12mo. Cloth, \$1.50.

The Heart in Pregnancy and the Childbearing Age. By Burton E. Hamilton, M.D. and K. Jefferson Thomson, M.D. Boston, Little, Brown and Company, [c. 1941]. 402 pages. 8vo. Cloth, \$5.00.

Diet in Sinus Infections and Colds. By Egon V. Ullmann, M.D. Second edition. New York, Macmillan Company, [c. 1941]. 185 pages. 12mo. Cloth, \$2.00.

Essentials of Dermatology. By Norman Tobias, M.D. Philadelphia, J. B. Lippincott Company, [c. 1941]. 497 pages, illustrated. 8vo. Cloth, \$4.75.

Textbook of Pediatrics. By J. P. Crozer Griffith, M.D. and A. Graeme Mitchell, M.D. Third edition. Philadelphia, W. B. Saunders Company, [c. 1941]. 991 pages, illustrated. 8vo. Cloth, \$10.00.

Proctology for the General Practitioner. By Frederick C. Smith, M.D. Second edition. Philadelphia, F. A. Davis Company, [c. 1941]. 466 pages, illustrated. 8vo. Cloth, \$4.50.

Medical Diagnosis and Symptomatology. By Samuel A. Loewenberg, M.D. Fifth edition. Philadelphia, F. A. Davis Company, [c. 1941]. 1139 pages, illustrated. 4to. Cloth, \$12.00.

Approved Laboratory Technic. Clinical, Pathological, Bacteriological, Mycological, Parasitological, Serological, Biochemical and Histological. By John A. Kolmer, M.D. and Fred Boerner, V.M.D. Third edition. New York, D. Appleton-Century Company, [c. 1941]. 921 pages, illustrated. 8vo. Cloth, \$8.00.

EDITORIALS

—Concluded from page 322

as an earnest of national respectability while continuing to drink. It was, he thought, a make-believe, childish gesture—not a matter of hypocrisy nor an imposition that was slipped over" on the

people. The same peculiar psychology would endorse tobacco interdiction with farcical "enforcement."

Investment in the stocks of snuff-making corporations may yet yield profits comparable to those made in the heyday of Wall Street.

EDITORIALS

Our Aging Population

IN the early days of this country there was a large proportion of children and young adults, with a correspondingly small proportion of older persons. It will not be long now, trends being what they are, when this state of affairs will be reversed.

Three factors are operating to produce the latter result—declining birth rate, curtailed immigration, and improved mortality in childhood and early adult life.

Dublin foresees some interesting (and disquieting) consequences. While normally conservative and tending to uphold sound political and social institutions, the elderly may be manipulated unscrupulously and demand grants ruinous economically and financially, including the gratification of special medical desires and needs. New types of hospitals for mental and physical ailments, particularly in southern areas, with a vast army of government-employed physicians, will be some of the effects on medicine.



Small apartments will be the rule. Per capita food consumption will tend to decline—a blow to agriculture. The payment of old age benefits under social security will be alarmingly accelerated.

Future federal budgets will have to take the aging population constantly into account, along with new pensions for war service.

The new pattern of life will call for statesmanship of a high order, if disaster is to be averted and advantage taken of whatever is promising in the new order of things.

But the conclusion can not be escaped that we are imposing upon our children an obligation to care for a huge proportion of old people, along with the debts now being incurred for other reasons.

The race suicide fanatics may yet face a fearful reckoning. Dublin looks for a minimum of about 13 births per thousand of population by 1980. He so reads the "wave of the future."

Some Industrial and Social Consequences of Vitamin Deficiency

DR. RUSSELL M. WILDER, of the Mayo Clinic, has propounded the interesting theory that lack of thiamine in the diets of workers and employers alike contributes importantly to industrial unrest. He bases his theory upon his experimental findings at the Clinic that unwillingness to work, sloppiness and disagreeableness could be brought about by deprivation of thiamine.

Moreover, Wilder believes that the notable lack of thiamine in such diets accounts for many industrial accidents, since such deficiency engenders worry, fear, anxiety and inattentiveness.

The remedy is to see to the restoration of lost elements in our edible fats, polished rice, refined sugar and processed corn meal. Not artificial enrichment, but restoration, should be the aim.

We venture to say that some of the social unrest that the world is witnessing is traceable to the same cause. So on the one hand we have the discontented, anti-social element among the workers, and on the other hand inept employers, and the weird politicians who disgrace some of our governmental bodies.

Deliver Us From the Perfect Scientist

DR. ALAN GREGG, of the Rockefeller Foundation, recently told a story about Dr. Hans Zinsser, the lately deceased Harvard bacteriologist, in order to make the point that our specialization sometimes goes to extremes, in Germany, for example, often resulting in frenzied conviction and obedience. Zinsser thought that the specialist in science had to seek a balance, perhaps by way of literature and art, in order to avoid such scientific fu-

tility and dehumanization. So the story goes that Zinsser, seeking an assistant, specified that only two qualifications were necessary—the candidate must have read Tristram Shandy and be able to play the viola. "I," said Zinsser, "can teach him all the bacteriology he'll need to know."

So a paradox emerges—a completely scientific scientist wouldn't be a good scientist.

Needless to say, Zinsser was a truly great man.

The Implications of Expediency

THE pure materialist sees no basic difference between the life of a dog and the life of a man. Grant this and it is all cant to throw up one's hands at the bombing of cities or violations of human international law. We commit such crimes against the claims of human personality or law as a matter of expediency, which is a purely materialistic mode of procedure.

Expediency that sanctions euthanasia is of the same sort that approves the atrocities of war.

We fear that this doctrine of expediency is bound to go far in a world increasingly materialistic. It governs many things besides the yearning to implement euthanasia. Thus it is expedient to retain privilege and monopoly against the interest of social and economic sanity (with decent nutritional standards). Indeed, it would be expedient to take out of our Constitution the Bill of Rights and the provision for impeachment. It is passing strange that this has not been done, which gives rise to hopefulness that all is not yet lost.

Better take care how far we commit ourselves to the doctrine of expediency, lest we cease doing only at retail what the Nazis do at wholesale.



SURGERY OF THE

Left Colon

JOHN M. SCANNELL, M.D., F.A.C.S.

Brooklyn, N. Y.

IT is not the purpose of this short paper to discuss the various malignant and benign tumors found in the colon but to present a procedure which has given the writer the best end results after operating for relief of obstructing lesions found in the left colon. The basic principle underlying the treatment of any organ or part is complete physiological rest.

Due to the anatomical, physiological, and bacteriological characteristics of the left colon, surgery in this section of the large bowel is difficult and the end results often unsatisfactory.

MANY operations have been devised for relief of pathology found in the left colon but in my opinion credit for bringing to the profession the most valuable one belongs to Sir Hugh Devine of Melbourne, Australia.

The Devine colostomy is well known to most of us and the chief reason for presenting this subject is simply to emphasize its value and possibilities. It is made in the transverse colon and permits "defunctionalization" and "debacterIALIZATION" of the involved segment.

The operation described by Devine is a modification of Paul's method and consists of three vertical incisions placed in the upper right quadrant. A loop of the transverse colon is delivered through the

large or middle incision and the edges of this loop are sutured together for a distance of four or five inches, the upper end of the loop being left free for a distance of one and a half inches. This loop is now replaced into the abdominal cavity, its division with cautery permitting the cut ends to be brought out under the skin through the small one inch incisions and sutured to the skin. The central incision is then closed. When healing takes place we have two openings in the skin two inches apart. The opening in the distal loop is used to wash this segment of the colon with saline solution or inject into it fresh, active cultures of *Bacillus acidophilus*, as the usual commercial preparations are ineffective.

One month later the pathology may be removed and finally the colostomy closed.

THE procedure as originally described by Devine has been modified by some of us in an attempt to simplify the technic and diminish the possibility of wound contamination.

I prefer to make one transverse incision in the upper right quadrant over the outer edge of the right rectus muscle about two and one half inches long. The incision is carried straight through the abdominal wall, incising a few fibers of the outer edge of the right rectus muscle in order to get more room. After the hand has been

introduced into the abdominal cavity and the exploration completed, a loop of transverse colon is delivered through the wound and treated as described by Devine.

If the obstruction in the left side of the colon is not complete the central part of the wound is sutured together in layers under the loop of the colon, and the gut is not divided for one week. (There is always a chance for contamination every time the gastro-intestinal tract is opened.) At the end of seven days the loop of colon protruding above the skin is removed, leaving two openings in the skin two inches apart.

In the cases where the obstruction in the bowel is complete, the gut is divided between clamps and the cut ends sutured to the skin at the outer and inner angles of the wound. The central part of the incision is sutured together around the free ends of the gut.

The second and third stages of the

operation are performed as described by Devine.

So far we have had no infections or herniations of our wounds following this procedure. Black silk was used for suture material.

One of the common errors made in operating on the left colon for obstruction is the removal of a segment of the sigmoid colon for carcinoma only to find out later that the correct diagnosis was diverticulitis. This mistake can easily be avoided by first doing a Devine colostomy.

IN conclusion, I wish to state that the Devine colostomy, in my opinion, offers the patient the best chance for recovery, following operations for the removal of obstructing lesions found in the left colon, without a permanent abdominal anus.
868 PARK PLACE.

Read before the 43rd annual meeting of the Associated Physicians of Long Island at St. Catherine's Hospital, Brooklyn, N. Y., January 25, 1941.

Cardiac Emergencies

AND THEIR TREATMENT

MARTIN A. MURPHY, M.D.

Brooklyn, N. Y.

DUE to lack of time, I shall only be able to discuss the cardiac emergencies associated with acute myocardial infarction. Schlesinger and Blumgart have shown that complete coronary occlusion and marked narrowing of one or more

coronary arteries may exist without any clinical signs or symptoms and without myocardial infarction. This is because a slow narrowing, causing complete obstruction of a coronary artery, is adequately compensated by a well developed collateral circulation. The term, acute myocardial infarction, is used whenever severe, crush-

From the Medical Service of St. Catherine's Hospital.

ing, anterior chest pain which is associated with collapse and evidence of muscle necrosis occurs. This may be confirmed by presence of leukocytosis, fever, increased corrected sedimentation rate and the progressive changes in the electrocardiogram.

Cardiovascular diseases are definitely on the increase. In New York City in 1929 there were about 8000 deaths. In 1939 the mortality had increased to 24,000, an increment of about 16,000. Cardiac disease, including myocardial infarction, will likewise share in this increase. It is a disease which predominately affects males in the ratio of 7 to 1, and it is most common between 50 to 70 years.

THE emergencies associated with acute myocardial infarction are: (1) Pain. (2) Left Ventricular Failure. (3) The Arrhythmias.

(1) Pain is frequently a definite emergency because of its severity and duration. It is usually substernal or parasternal and not precordial or apical. The degree varies. It may be mild, moderate or severe. Usually it is of a heavy, pressing, constricting character. Occasionally it is epigastric and upper abdominal and has to be differentiated from acute gallbladder conditions, a ruptured peptic ulcer or acute pancreatitis. It lasts usually an hour or longer and frequently radiates to the left shoulder and down the inner aspect of the left arm and the ulnar side of the hand. It may occasionally radiate to both shoulders, to the back, or to the jaw. It may disappear spontaneously or may last hours or days if untreated. It is often associated with nausea and vomiting and peripheral circulatory collapse.

The drug of choice for the relief of pain is morphine sulfate. It should be prescribed in small dosage such as $\frac{1}{8}$ or $\frac{1}{4}$ grain, and repeated at half-hour intervals if pain is not relieved. Large doses should not be used since morphine depresses the respiratory center, especially in the presence of a diminished circulation to the brain. There may be a reflex vagal standstill of the heart during periods of apnea. During the period of more rapid

breathing the heart may accelerate. This alternating cardiac mechanism cannot be tolerated by the damaged heart. Sometimes morphine itself produces nausea and vomiting in susceptible patients. This should be avoided as both of these increase the strain on an already disabled heart. Pantopon gr. $\frac{1}{3}$ and dilaudid gr. $\frac{1}{20}$ may be used in the same dosage as morphine. Once the severity of the pain has been lessened or abolished, codeine gr. $\frac{1}{4}$ to $\frac{1}{2}$ with phenobarbital gr. $\frac{1}{4}$ to $\frac{1}{2}$ t. i. d., p. c. may be used for a few days longer. Nitroglycerin is mentioned only to discourage its use. It may produce headache, ectopic beats, tachycardia and lowered blood pressure. Very frequently this drug induces an increase in the peripheral collapse in the presence of infarction of the heart.

(2) Another disastrous complication of myocardial infarction is left ventricular failure. This is characterized by dyspnea, cyanosis, weakness and sweating in its early stages and basal râles and pulmonary edema as the failure increases. There is usually a fall in blood pressure although at the height of pain, the blood pressure may be increased. The pulse may or may not be accelerated depending on the severity of congestive failure and collapse. Frequently in mild cases absolute bed rest, morphine for pain, and oxygen inhalations of 40 per cent to 60 per cent will be sufficient. In the more severe cases associated with pulmonary edema 100 per cent oxygen and atropine sulfate in doses of gr. $\frac{1}{150}$ and repeated in fifteen to twenty minutes may be helpful in diminishing the bronchial secretions. In the cases where severe dyspnea, cyanosis and congestive failure are present a phlebotomy of 350-450 cc. is indicated. It improves myocardial function by lessening the strain on the left ventricle through a lowering of venous pressure. Digitalis is not used in the first few days of acute myocardial infarction unless continuous auricular fibrillation occurs or a severe picture of serious heart failure with intense pulmonary engorgement, marked swelling of the cervical veins, enlarged liver and edema.

If given, it should be used in doses depending on the urgency and seriousness of the case. For rapid digitalization, tincture of digitalis may be given by mouth in one dose, fixing the dose at 1 minim per pound of body weight. Another way is to give $\frac{1}{4}$ of the entire dose of any reliable digitalis preparation intravenously or intramuscularly and $\frac{1}{8}$ of the total dose every four hours for four doses. Then grain $1\frac{1}{2}$ t.i.d., p.c., until patient is completely digitalized. It will be necessary to watch carefully for signs of intoxication. These are nausea, vomiting, premature beats and tachycardia.

Another drug which may be of some use in cases of myocardial infarction which are complicated by Cheyne-Stokes breathing or coma is aminophyllin. It should be given intravenously in doses of 5 to $7\frac{1}{2}$ grains and injected very slowly. Coronary circulation is improved as is circulation to the brain and vital centers. Unfortunately, however, the effects of this drug are very transitory.

Glucose intravenously should not be used as it increases blood volume. There is no experimental or clinical proof of its value.

Mercupurin relieves the degree of congestive failure by reducing venous pressure through diuresis. Before being administered an appraisal of renal function should be made.

5) Irregularities of the heart are quite common in the course of myocardial infarction. Congestive failure may be readily produced by these arrhythmias if they are not controlled. Serial electrocardiograms are very important in the diagnosis and for the proper evaluation of therapy. The important arrhythmias associated with myocardial infarction in the order of their frequency and importance are: auricular fibrillation, auricular flutter, ventricular tachycardia, paroxysmal, sinus and auricular tachycardia, partial heart block and complete heart block, i.e., complete A. V. dissociation with Adams-Stokes seizures.

Auricular fibrillation and auricular flutter are both treated by digitalis either by slow or rapid course, according to the

severity of the case.

Paroxysmal auricular tachycardia may be treated by carotid sinus pressure or ocular pressure. If not successful digitalis in adequate doses will slow rate.

Paroxysmal sinus tachycardia complicating myocardial infarction is rare. If congestive failure ensues, digitalis would appear to be the drug of choice in slowing the rapid rate.

Ventricular tachycardia is a serious complication and calls for immediate administration of quinidine sulfate: grains 10 q. 2. h. for six or seven doses and then q. 3 or 4 hours until arrhythmia is abolished. However, in some cases it may be necessary to give quinidine sulfate gr. 3 every hour or two. This arrhythmia may lead to ventricular fibrillation and death. Therefore prompt and energetic treatment is necessary.

In complete heart block, i.e., complete A. V. dissociation with Adams-Stokes syndrome, which may occur in the presence of a posterior wall infarction involving the A. V. node, 1 cc. of adrenalin chloride (1:1000) is given and repeated every half hour until cardiac rate is either increased or is changed from a labile rate to a more fixed one in which standstill of the ventricle does not occur.

When premature beats of the ventricle occur, quinidine sulfate gr. 3 four times a day may be given to abolish the focus of irritable muscle in the ventricle.

In terminal asystole and ventricular fibrillation death is usually so sudden that treatment (such as intracardiac injection of adrenalin) is usually of no avail.

Summary and Conclusions

A FEW of the cardiac emergencies associated with acute myocardial infarction have been discussed. They are (1) Pain, (2) Left Ventricular Failure, (3) The Arrhythmias.

The purpose of all the forms of treatment is to reduce the work of the heart in the presence of prolonged cardiac pain, to improve the circulation through the coronary arterial system and to reduce excessively high cardiac rates in the presence of the arrhythmias.

Drugs and measures instituted to realize these conditions have been discussed. They are absolute bed rest, morphine, atropine sulfate, oxygen and phlebotomy. Hypertonic intravenous glucose and nitroglycerin are contraindicated. Digitalis is used only in the most extreme cases of congestive failure and auricular fibrillation. Digitalis and quinidine sulfate are used for the control of the auricular and ventricular tachycardias: digitalis for auricular, quinidine for ventricular.

59-11 70TH AVENUE, RIDGEWOOD.

**Discussion by Louis H. Bauer,
M.D., F.A.C.P.**

WITH reference to Dr. Murphy's paper, I wish to emphasize a few points, elaborate a few more, and take issue with one or two.

First of all, besides the findings mentioned as confirming myocardial infarction, I think we should add fever, which is practically always present if watched for, and a fall in blood pressure which may be delayed for a few days. Second, under the emergencies associated with the condition, I think shock is most important and is very frequently present. I agree that the pain is usually substernal. In fact, I believe that it is practically always substernal though it is often associated with pain in the precordium or epigastrium.

I do not agree with giving $\frac{1}{8}$ th of morphine for this pain nor do I think that morphine acts as a respiratory depressant in myocardial infarction. I think these patients tolerate prodigious doses of morphine and show but little slowing of respiration, particularly if oxygen is administered. In severe pain, if sure of the diagnosis, I often give $\frac{1}{2}$ grain to start with except in the very aged. Remember that morphine is useful in combating shock and we are dealing with shock. Oxygen, in my opinion, is almost if not quite as valuable as morphine in relieving coronary pain. High concentration should be given. The new B.L.B. mask permits 100 per cent oxygen to be given and is most useful.

I agree that digitalis should not be given

A knowledge of the physiologic and pathologic processes present in acute myocardial infarction is necessary for the proper institution of treatment. The results obtained are highly satisfactory in a great proportion of these acute episodes.

The successful convalescence and the return to activity of many of these patients is full compensation for the time and effort used in the acquisition of this knowledge.

59-11 70TH AVENUE.

the first few days after infarction but I would go further and say that it should not be given the first few weeks if possible to avoid it. Occasionally, one has to give it but usually failure can be combated with morphine and oxygen and, if necessary, mercupurin. I do not think it is necessary to determine kidney function before giving mercupurin. Congestive failure alone will result in albumin and occasional red blood cells being present but if there is no marked evidence of kidney damage in the urine, it is perfectly safe to give mercupurin.

I agree that glucose should not be given as it may precipitate failure or the development of auricular flutter or auricular fibrillation.

ANOTHER emergency which often has to be considered is a marked hypotension. So long as the systolic blood pressure remains above 80, it is not necessary to do anything about it, but if it falls much below this, certainly if it falls below 70 and remains there for any length of time, there will develop a paralysis of the circulatory center and the patient will die no matter what is done. I have found caffeine sodium benzoate one excellent means of keeping the blood pressure above this critical level.

Again, I should hesitate to use digitalis to correct any irregularity. Quinidine is preferable whether the irregularities are auricular or ventricular in origin. I think it is rare that 10 grains of quinidine sulfate is necessary at a dose for in my experience 3 to 6 grains at a dose is ample.

I DO not believe that atropine is of much value in left ventricular failure with pulmonary edema. To be really effective, one would have to give an almost poisonous dose of atropine. Furthermore, atropine accelerates the heart rate, which is not a good thing, and I prefer morphine and oxygen for the emergency treatment of this condition.

One always hesitates to use adrenalin following myocardial infarction although it is less dangerous in heart block than in

other emergencies following infarction. Here is a condition in which I would recommend atropine although I admit that atropine is less effective than adrenalin in relieving heart block, but I think it is worth trying first.

I have enjoyed listening to Dr. Murphy's paper and appreciate the opportunity of discussing it.

Read before the 43rd annual meeting of the Associated Physicians of Long Island at St. Catherine's Hospital, Brooklyn, N. Y., January 25, 1941.

Nose and Throat Complications **OF UPPER RESPIRATORY INFECTIONS**

STEPHEN H. DE COSTE, M.D., F.A.C.S.

Brooklyn, N. Y.

INFECTION of the upper respiratory tract, if limited to the nasal chambers, may cause but little distress, except for the slight temporary malaise secondary to the local congestion and obstruction.

In the presence of a more virulent type of infection or when the so-called cold in the head is neglected, the infection may spread to and involve the paranasal sinuses. With the involvement of the sinuses complications are more apt to arise.

The mucous lining of the nose is ciliated in type and is continuous with that of the nasal sinuses. It is the great protective mechanism of the nasal cavity in the presence of infection or invasion of any foreign material. When such infection arises the ciliated action is greatly accelerated and the offending material is mechanically swept out of the cavity.

In prolonged infection this activity may be slowed up and the surface of this por-

tion of the respiratory tract may become blanketed with infectious material. This may lead to suppuration and we then have a purulent rhinitis and, with the inevitable involvement of the sinuses, a rhinosinusitis.

THE nasal cavities are very rich in blood and lymphatic supply. The venous return is through the ethmoid system, which in turn drains into the ophthalmic and finally into the cavernous sinuses.

The lymphatics of the nose proper, according to Schaeffer, ramify through the mucosa and finally empty into the submaxillary chain of nodes. Those of the paranasal sinuses drain backward and empty into the retropharyngeal lymph nodes. This might explain some of the obscure cases of submaxillary cervical adenitis and retropharyngeal abscesses.

All the sinuses, with the exception of the maxillary, are in close association with

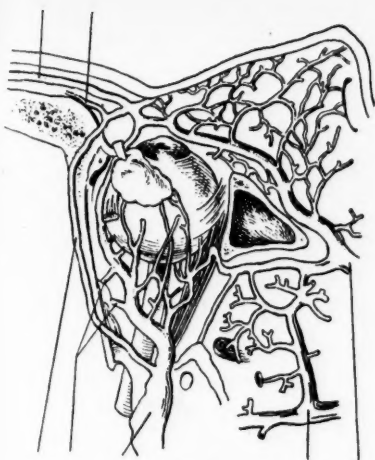


Fig. 1

Venous anastomoses of the nose and orbit showing intimate relation (after Quain).

important vital structures.

The frontals and the ethmoids form practically the entire floor of the anterior cerebral fossa. In the median line of the anterior fossa the ethmoid through the cribriform plate is in almost open contact with the dural covering of the anterior lobes of the brain.

Laterally the orbits are separated from the ethmoids by a plate of bone of paper-like thinness, the lamina papyracea.

The sphenoids are bounded antero-inferiorly by the rhinopharynx, laterally and posteriorly by the mid brain, the optic nerves and the cavernous sinus.

The bony wall between the optic nerve and the sphenoids is frequently very thin and may perforate in the presence of infection.

The ostium of the sphenoid in the anterior wall is in the upper third and does not lend itself to very good drainage in the presence of infection.

In frontal sinusitis the process may extend posteriorly and involve the dural plate of the anterior fossa, from which sub-

dural or cerebral abscess may result. If the infection should involve the anterior wall of the cavity a very serious complication may occur, viz., osteomyelitis of the frontal plate. This is a complication which is often difficult to control and frequently invades the cerebral structures.

The weak orbital plate of the ethmoid frequently ruptures in infections of the ethmoid labyrinth and an orbital cellulitis or orbital abscess may occur.

Basilar involvement may follow through direct involvement by way of the cribriform plate.

Both serious and far-reaching complications may follow infection of the sphenoids.

The close association of the optic nerves with the walls of the sinus may cause a neuritis of the optic nerve with partial or complete blindness. Unless this condition is attended to promptly permanent blindness may result.

If the cavernous sinus should become involved thrombosis, with its usually fatal results, may occur.

The ever-present postnasal drip, in involvement of the posterior group of nasal sinuses, probably accounts for the numerous pulmonary complications met with in

Fig. 2

Showing intimate relation of optic nerves and paranasal sinuses, sphenoids and posterior ethmoids.

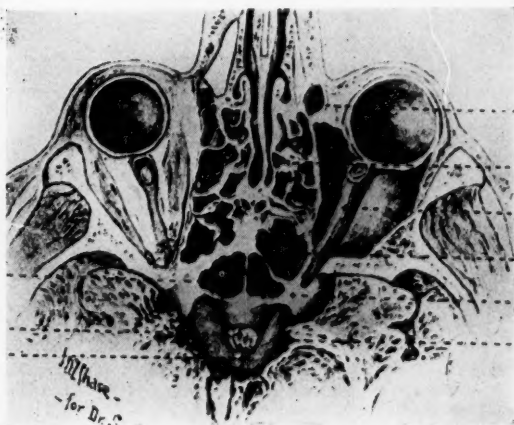




Fig. 3

Paranasal sinuses of a child 16-18 mos. old. Also the relatively low location of the ostium of Eustachian tube.

these infections. Among these may be mentioned laryngitis, bronchitis, bronchiectasis and asthma. Even the gastro-intestinal tract comes in for a share of disturbance.

The Eustachian tube may be the seat of an infection and with the process traveling upward it may reach the middle ear and otitis media, catarrhal or suppurative, develops with its further complication mastoiditis.

This complication, viz., middle ear involvement, is more common

in the young child. This may probably be accounted for by reason of the lower level of the orifice of the tube and also the fact that the tube lumen is wider; the tube is not as long as in the adult and is straighter.

J. S. Evans has enumerated thirty-seven distinct complications that may arise from upper respiratory infections.

Time does not permit dealing with the symptoms and diagnosis of the above named complications. I wish to say a few words about treatment.

The best way to avoid trouble is to catch the infection at the onset, before the ciliated action is overwhelmed. Rest, forced fluids, alkalization and supportive treatment should be instituted early.



Fig. 4

Frontal section of a child 16-18 mos. old. Note the slit-like maxillary sinus with its location on the nasal side of the orbit. Note the infra-orbital nerve external to the maxillary sinus.

Aeration of the airway is very important. Astringents such as neo-synephrin or ephedrine one eighth to one quarter per cent in an isotonic saline solution are efficient.

Vaccines, whether stock, autogenous or nonspecific, have their enthusiasts. The sulfonamides are the latest useful discoveries.

Oils, whether alone or combined with other medication, I believe should be condemned. Proetz, Fenton & Ridpath have shown that the action of the cilia is greatly

reduced and at times paralyzed by the local application of oils. In the light of the above the whole purpose of medication is defeated with such a method. Cannon has demonstrated oil in the bronchial tree and lipoid pneumonia, following its use in the nose.

After the acute stages are passed the Proetz form of treatment, viz., displacement, may be instituted.

1179 DEAN STREET.

*Discussion by Harry McGrath,
M.D., F.A.C.S.*

A PART from the discomfort of local pain, obstruction and discharge, infections of the paranasal sinuses are in themselves of little serious significance.

It is the possible complications which demand accurate diagnosis and proper treatment of the original infection. And it is for this reason that Dr. DeCoste's paper is timely and instructive.

A diseased sinus can affect remote or contiguous anatomical structures by three main routes:

1. By absorption of bacteria into the blood stream with subsequent implantation in other organs. In other words, focal infection.
2. By direct spread along vascular, lymphatic or other anatomical channels.
3. By aspiration or ingestion.

Certain physiological and pathological considerations therefore determine the frequency and the site of possible complications. It is interesting to note that the paper under discussion does not refer to any foci of infection in the nasal sinuses. A few years ago a survey at the Mayo Clinic confirmed the assertion of Shambaugh that absorption of bacteria from the sinus mucosa is one of the rarest occurrences in medicine. It is well to remember this authoritative opinion in considering the importance of infections in the sinuses.

Direct spread accounts for the orbital, pharyngeal, middle ear and intracranial complications, all of which are common experiences in nasal practice and are sufficiently well recognized.

THE aspiration into the bronchial passages and the ingestion into the alimentary tract of infected secretions from the nose, and the consequent pulmonary and gastric disturbances, are very common but not sufficiently recognized. If, as has been asserted, ninety per cent of cases of bronchiectasis have a demonstrable origin in the nose, it is reasonable to suggest that the majority of acute and chronic bronchial infections have a similar origin. This applies particularly to children. Every patient who complains of persistent cough should have the benefit of a thorough nasal examination. The same thing applies to alimentary disturbances. It is difficult to imagine how the gastric mucosa can tolerate the constant swallowing of nasal purulent discharge—but how often is the dyspeptic referred for a rhinological consultation?

The question of treatment naturally arises. Dr. DeCoste has referred to the destruction of the ciliary epithelium by solutions commonly used in the nose. It is disconcerting to know that practically all the nasal astringents and antiseptics have been condemned by research workers studying ciliary action. Even argyrol, the last refuge of the destitute nasal therapist, is included in a recent survey of drugs which injure the nasal mucosa. As Dr. DeCoste has stated, the desideratum of treatment is the proper aeration of the sinuses with as little trauma to the mucosa as possible. This can probably best be accomplished by confining the patient to a room in which standard conditions of temperature and humidity are maintained,

by the use of an astringent spray in isotonic solution, and steam inhalations. This may not be heroic therapy, but it is safe. It applies, of course, only to acute infections.

EVEN in the presence of retained pus in an antrum this conservative treatment should suffice. It is surprising how little, if any, toxemia is associated with an empyema of the antrum. Such an infection can persist for days without any fever, leukocytosis or adjacent lymphadenitis. Ex-

perimentally, snake venom and various poisons have been walled off in the sinuses without any evidence of absorption. It is therefore rational therapeutics to avoid surgical interference and one usually finds that without such interference nature ultimately establishes drainage.

It has been a privilege to discuss this paper and I thank Dr. DeCoste for the opportunity to do so.

Read before the 43rd annual meeting of the Associated Physicians of Long Island at St. Catherine's Hospital, Brooklyn, N. Y., January 25, 1941.

Kidney

DECAPSULATION

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Brooklyn, N. Y.

THE subject I am discussing today is not a new one. Rather it is one of the older urological procedures; one which, however, has been all but discarded and relegated to the limbo of forgotten techniques.

Decapsulation of the kidney in cases of Bright's disease was first recommended by Harrison, in England, in 1896 and a few years later by Edebohls in this country. Both men had performed kidney operations upon patients suffering from Bright's disease and had been highly gratified with the improvement of the nephritic condition following the procedure. Both attributed this improvement to the decapsulation which had been incidental to their operations and proceeded to use it thereafter for such a purpose.

The medical profession was not slow to grasp at this straw of hope in the treatment of the dreaded Bright's disease and soon the procedure was widespread.

However, in the ensuing years so confused has been the classification of cases reported and so uncertain the results in most instances that the advantages and indications for decapsulation have become indefinite and insecure and the operation has fallen into disrepute.

DURING the past 18 years we have at St. Catherine's performed this operation but six times. Of these cases, three have resulted in operative deaths but of the three remaining two have resulted in such startling recoveries that we feel the procedure was life saving. I should like

to present our most recent successful case in some detail.

The patient, a boy 11 years old, was admitted to the pediatric service on April 3, 1940, with the history that three days before admission he had developed a dry, non-productive cough and that the following day he had voided about six times and each time his urine had been blood-tinged. He also vomited four times that day. For two days he had had fever and on the day before admission he had transient para-umbilical pain. There were no chills. On the morning of admission the father noticed slight swelling of the face and eyelids.

On admission the temperature was 104°, respirations 37, pulse 128 and blood pressure 126/60. The physical findings were essentially negative except for puffiness of the face and eyelids and evidence of an upper respiratory infection. The day following admission, however, there was both clinical and x-ray evidence of a left lower lobe pneumonia, rather extensive in nature. The urine at this time was acid in reaction, showed a three plus albumin but no sugar or acetone and had 6-8 pus casts, 15-20 red blood cells and many white blood cells per high power field. Blood chemistry revealed sugar to be 96 milligrams, N.P.N. 81.1 and creatinine 2.1. During the next four days the pulmonary pathology remained essentially unchanged but the child's general condition became gradually worse with drowsiness and finally a semistuporous condition developed. The temperature continued to fluctuate irregularly between 100 and 104°, the N.P.N. rose gradually to 200 milligrams, and the creatinin to 5.4 while the CO₂ combining power fell to 28 volumes per cent. The urinary output during this period gradually decreased until finally there was a period of complete anuria for almost 24 hours. During this interval treatment was purely supportive and symptomatic. No typing of sputum was obtainable, only staphylococci being grown from laryngeal swabs—and no chemotherapy was instituted. Parenteral fluids were adequately supplied, sodium bicarbonate was given intravenously to combat the

acidosis and concentrated glucose and magnesium sulfate were given for their diuretic action.

BECAUSE of the failure to respond to such conservative medical therapy and because of the critical nature of the child's illness transfer to the Urological Service for decapsulation of the kidneys was advised and carried out. The procedure was performed under spinal anesthesia using 90 milligrams of novocain and the entire operation consumed only 40 minutes. The actual decapsulation consisted merely of splitting the capsule for the length of the kidney and then separating it with the finger from the underlying tissue. The kidneys at operation were definitely swollen and pale.

The postoperative course was unexpectedly serene. Within the first twelve hours the output was 135 cc. and thereafter there was a progressive although quite gradual return to normal output which was achieved on about the eighth day postoperative. The blood nitrogen level fell in proportion as the output increased though it did not return completely to normal until about the 18th day after operation. The temperature never was above 102° and by the third day had returned to normal, never rising significantly thereafter. Parenteral fluids to the amount of between 1500 and 1800 cc. daily as well as concentrated glucose were given for 10 days postoperatively. Convalescence was otherwise uneventful. The urine gradually cleared though at discharge 34 days following admission there was still a faint trace of albumin, 4-6 red blood cells and 3-4 white blood cells per high power field. The follow-up has been adequate. The last check-up was on the fourth of this month at which time the N.P.N. was 27, the creatinine 1.0 and the urine showed but a very faint trace of albumin and 1-2 red blood cells per high power field.

WHILE it may be argued that this child would have recovered without decapsulation such a mode of recovery is not conceivable to those of us who watched him go progressively downhill until op-

erated upon and then progressively, even if somewhat slowly, uphill thereafter. We feel that this case not only demonstrated rather conclusively that decapsulation is a still useful procedure, but, more than that, it stimulates the larger questions of *when* is it useful, *when* is it indicated?

In the past decapsulation has been used in all types and all stages of Bright's disease as well as in a wide variety of conditions varying from uncomplicated eclampsias through metallic poisonings to nephralgias. Likewise every theory as to its mode of operation, from relief of tension through improved collateral circulation to denervation of the kidney, has been advanced.

THOUGH we still can not claim to know how decapsulation produces its effect, I do believe that from our own and the experiences of others, the indications for the operation have been empirically narrowed to include selected cases in which anuria or severe progressive oliguria is present. Such cases might be most conveniently gathered into the following groups:

- 1) Acute glomerular nephritis, especially in children.
- 2) Nephrosis with edema, probably including true lipoid nephrosis.
- 3) Necrosis of the kidney—specifically the bilateral cortical necrosis occasionally associated with severe toxemias of pregnancy. The procedure is apparently of no avail in mercurial or other metallic poisonings only for the reason that by the time anuria occurs other severe extrarenal changes have probably doomed the patient.

Bureau of Clinical Information

THE Committee on Medical Education of Medicine at the New York Academy maintains a *Bureau of Clinical Information* where detailed information may be obtained regarding opportunities for post-graduate medical study in Greater New York and also in other cities of the United States and Canada.

A Bulletin of Non-Operative Clinics

4) Certain selected cases of chronic glomerulonephritis with acute exacerbations where anuria has been present for several days. It is of no avail in the terminal stages of a progressive chronic nephritis.

I stress again it is probably not indicated in *any* case when anuria or progressive oliguria is not present.

Naturally decapsulation should not be the first therapeutic agent to be employed or even considered in such cases. Parenteral fluids should be administered in adequate amounts, acidosis should be combated, extrarenal secretion should be encouraged, diuretics such as glucose or aminophyllin should be administered and even ureteral catheterization with lavage of the renal pelves should be resorted to before undertaking any more radical procedure. Conversely, however, if such conservative measures do not produce results in a comparatively short period of time, say twenty-four hours, decapsulation should be considered before the optimum time passes by and the patient is beyond any aid.

Summary and Conclusion:

1) A case report has been presented in the hope of demonstrating that decapsulation should still be part of our urological armamentarium.

2) An attempt has been made briefly to state our conception of what the present-day indications for decapsulation should be.
397 STUYVESANT AVENUE.

Read before the 43rd annual meeting of the Associated Physicians of Long Island at St. Catherine's Hospital, Brooklyn, N. Y., January 25, 1941.



held in twenty-nine hospitals is published. Copies of this Bulletin may be obtained at the Bureau or will be mailed to visiting doctors on request.

The Bureau also publishes a *Daily Bulletin* which announces meetings, lectures, conferences and other interesting medical activities of the day, as well as the operative work to be performed in the clinics of most of the important hospitals of the city. Fee for mailing, fifty cents a week.

Serums and Vaccines

In Prevention and Treatment of Certain Communicable Diseases of Children

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Brooklyn, N. Y.

DEVELOPMENTS in specific prevention and treatment of certain of the communicable diseases of childhood are becoming of growing importance in the realm of preventive medicine. Specific diphtheria prophylaxis has accomplished a great lowering in morbidity and mortality of diphtheria in every city in which it has been applied to the majority of the susceptible child population.

While less utilized as yet, owing to the mildness of the disease, we have nevertheless valuable specific prophylactic measures and treatment for scarlet fever. While the methods for specific prevention and modification of measles involve the use of antiviral sera, which can only be employed effectively under conditions of known exposure, nevertheless certain of these sera are most valuable and deserve much more extensive use.

Diphtheria—Active Immunization

IT is over 25 years since Park and Zingher¹ began their work with toxin-antitoxin and an equal time since Schick² described his skin test for immunity. Yet despite this, as has recently been stated³, the type of inoculations being used in most parts of the United States cannot be relied on to produce a permanent immunity. As each new antigen has been described and each change of dosage has been advocated there has been considerable confusion in

the application of the new ideas to routine immunization procedure.

Since Ramon⁴ described anatoxin or formol toxoid in 1923 this preparation has largely replaced toxin-antitoxin because it does not contain any animal antitoxin serum, no free toxin, and will not dissociate. With the appearance of alum toxoid there was a temporary trend toward its use but at present it is more generally conceded that while alum toxoid is an efficient antigen, formol toxoid has certain advantages in being easier to administer, more certain in dosage, gives less reaction, less subsequent pain, and no induration at the injection site. For the primary immunization of infants, formol or plain toxoid is largely employed. The method on the basis of present knowledge is to use 3 doses of 1 cc. at a one-month interval, given by the subcutaneous route at the age of 9-12 months. This is followed by a Schick test in 4 to 6 months and if this test is positive, a second similar series of injections is made.

BETWEEN the age of infancy and the time of entrance to school it appears that our procedure lacks uniformity. However, there is a tendency to consider Schick testing at two-year intervals as desirable. Schick reactions should be read always on the 5th or 6th day after the test has been performed to rule out any pseudopositive reactions, as these false reactions will have

disappeared by this time leaving only the true reactions with their accompanying pigmentation. At the age for school entrance or at any time between infancy and that age, an injection of 1 cc. of formol toxoid is given to any child with a positive Schick.

After the age of six years, the incidence of reactions to the protein content of the antigen becomes of more importance. Therefore it is considered advisable from this age on, always to perform a Schick test first with a control Schick on the opposite arm. In Canada and England, a Moloney test is substituted for the control Schick, and it gives similar information as to the amount of reaction to be expected from the protein content of the toxoid mixture. This, in turn, is an accurate index of the reaction to be expected from the injection, and permits the regulation of proper dosage, whether to use 0.5 cc. or to give in divided doses of 0.1 cc. 0.3 cc. and 0.5 cc.

Scarlet Fever

FOLLOWING the research work of the Dicks⁵, the relationship of the hemolytic streptococcus to the etiology of scarlet fever was established. While many strains of the organism are today known to be capable of causing the clinical picture of scarlet fever, nevertheless the fundamental value of the methods of specific prophylaxis, specific therapy and determination of susceptibility, as described by the Dicks, has not been in any way impaired.

I. The Dick test is our only method of determination of susceptibility to scarlet fever. The 0.10 cc. of 1/1000 dilution of scarlatinal toxin, given intradermally, gives a reaction in six to eight hours, of 24 hours duration, in individuals who are susceptible to scarlet fever. The test has proven its specificity in determining susceptibility to scarlet fever in many parts of the world where it has been employed and has provided reliable information for the immunization of the susceptible population. It has permitted determination of susceptibles in institutional exposures or in household exposures, or among those whose occupation requires close contact with the disease, i.e., nurses, doctors,

and domestics in contagious disease hospitals. Under all such conditions the value of the method has been over and over again proven. While the skin test is fainter than the positive Schick and leaves no pigmentation, it is clearly enough defined if moderately or markedly positive.

II. Active immunization of Dick-positive persons has been employed extensively and statistical data have proven its value. It is indicated for: (1) Those exposed constantly to the disease as in communicable disease hospitals. (2) All susceptible Dick-positive persons during severe epidemics of scarlet fever. (3) For the control of epidemics in hospitals, child caring institutions, schools, military contingents, etc.

It must be admitted the method has not been adopted generally in private practice, owing no doubt mainly to the mildness of the disease in the United States in recent years, and the admitted occurrence of a small percentage of reactions (usually quite mild).

AS to the dosage, as expressed in S.T.D. (Skin Test Doses), the total amount of scarlatinal toxin given according to more recent standards is 115,500 to 135,500 S.T.D. administered over a period of five weeks, divided into five injections starting with 500 S.T.D. The duration of immunity appears to be from one to three years or more. The method is over 95 per cent effective in changing a Dick-positive to a Dick-negative individual. It appears that a smaller dosage may be effective if given by the intradermal route, as reported recently by Earl⁶. Drs. George and Gladys Dick⁷ have just issued a report of the results of administration of scarlet toxin by mouth. It was given in an enteric coated tablet, in a total dosage of 95 million S.T.D. spread over a period of two weeks; 95 per cent immunity was found to result. The method is still only experimental, but the results reported by the Dicks indicate a valuable addition to our armamentarium.

Scarlet Fever Antitoxin in Therapy

FOR therapeutic use this antitoxin should be regularly employed. It is

certainly indicated in the treatment of all moderate and severe cases of scarlet fever, in the septic and toxic forms of the disease, in patients who develop complications in the eruptive stage and those who are ill with other diseases when scarlet fever develops.

The antitoxin is quite rapidly effective in neutralizing the toxemia, in lowering the temperature, and in producing earlier fading of the eruption and subsidence of the angina. Desquamation is lessened and complications are reduced in incidence. In severe scarlet fever the mortality rate seems to bear a similar relationship to the time antitoxin is administered as it does in diphtheria treated by antitoxin, the rate rising rapidly as delay in antitoxin administration increases.

Scarlet fever antitoxin should be used by the intramuscular route and only very rarely intravenously, and then only on very definite indications, and with careful preliminary testing of the patient as to sensitivity. The dosage is 5,000 to 10,000 units intramuscularly in the buttocks.

Convalescent serum may be utilized, instead of antitoxin, in individuals in whom reactions are apt to occur from horse serum, as in those with definite allergic histories. It is, however, somewhat less potent than scarlet fever antitoxin.

Measles

THE specific prophylaxis of measles is today a recognized procedure the value of which is no longer disputed. It has been established that if exposure to the disease is known it may be prevented, or modified at will, by the injection of convalescent serum. Complications and mortality under the conditions that control in this method of "sero-prevention" and "sero-attenuation" are practically eliminated. Parents need to be given educational information about this procedure and many more physicians should employ it.

Horse, goat or other animal sera obtained by the injection of animals with the organisms of Tunnicliff, Ferry and Fisher, or Caronia have failed to show the specific prophylactic properties of convalescent

measles serum.

The specific prophylactic agents for preventing or modifying measles are four:

- (1) Measles convalescent serum (Nicolle and Conseil⁸).
- (2) Immune Globulin or Placental Extract (de Sousa⁹, McKhann and Chu¹⁰).
- (3) Globulin Fraction of Immune Human Adult Serum (Karlitz¹¹).
- (4) Immune Adult Serum or Blood.

With each of these preparations we can prevent or modify measles. Of them the most certain and potent is convalescent serum. It causes the least discomfort, and practically no reactions. Given in the first five days of incubation, in dosage of 5 cc. for children under six years of age, the protection rate is over 90 per cent. If given in one half this dose, 2.5 cc., at the same period of incubation or in a dosage of 5 cc. on the 6th to the 9th day of incubation, a modified attenuated measles is produced. The results according to the dosage employed and the day on which it is injected are very certain. The immunity from complete protection is transient and passive in character, of a duration of two to three weeks. The immunity of attenuated or modified measles is permanent. This has been disputed but a recent report by Townsend¹² is indicative of its permanency; 32 patients failed to develop measles on exposure after having an attack of modified measles 10 years before. Attenuated or modified measles is preferable, with the exception of institutional exposures, or of young children under two years, or of those who are malnourished, debilitated or convalescent from other diseases, in whom complete protection is usually desirable.

THE other prophylactic preparations are fundamentally of the same derivation, namely, immune blood. Their antibody content appears definitely lower, although we can only roughly measure this titer by the power to prevent a measles eruption appearing if injected intradermally from 48 to 72 hours before the eruption.

In the case of adult immune serum the results obtained, according to the day of incubation that the injection is administered, are not so predictable as with convalescent serum, the modification of the measles symptomatology is less definite, there is a higher percentage of failure, and the dosage of serum must be at least twice as much.

The globulin concentrate of immune adult serum appears to give more certain results, and a lessened percentage of failures, as compared with the usual adult immune serum.

PLACENTAL or immune globulin, while more available commercially than convalescent serum, is not so potent a remedy. The results, as between prevention and attenuation, are not so predictable; the percentage of failure is in this sense greater. Moreover, the method is not so adaptable to use in hospital exposures, the degree of modification ap-

pears less definite than with convalescent serum, and the dosage required for a similar effect is higher. The product is more expensive and produces much more local reaction. The work of O'Brien¹³ strongly indicates that the diphtheria antitoxin content of placental blood is no different from that in the blood of the same mother, for he found the two to have the same titer of diphtheria antitoxin. It is a reasonable supposition to believe the same would logically be true also of the measles antibody content¹⁴. Rolleston¹⁴ considers that the presence of placental substances in the immune globulin most likely causes the reactions which sometimes follow the injection. Karlitz has reported that his globulin concentrate derived from normal immune blood gives more uniform results than does placental globulin in similar doses and without the unpleasant reactions of the latter. 1298 CARROLL STREET.

Read before the 43rd annual meeting of the Associated Physicians of Long Island at St. Catherine's Hospital, Brooklyn, N. Y., January 25, 1941.

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American Congress of Physical Therapy

THE 20th annual scientific and clinical session of the American Congress of Physical Therapy will be held September 1 to 5 inclusive, 1941, at The Mayflower, Washington, D. C.

The mornings will be devoted to the annual instruction course, and the afternoons and evenings will be devoted to the scientific and clinical sessions. The seminar and convention proper will be open to all physicians and qualified technicians.

All the phases of physical medicine will be covered in the general program, including a special symposium on polio-

myelitis. The program will be of interest to the general practitioner as well as to the specialist in physical therapy.

For information concerning the seminar and preliminary program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

At the same time the 25th annual meeting of the American Occupational Therapy Association will be held at The Mayflower. A combined meeting will be held on Wednesday, September 3, 1941. For information concerning the Occupational Therapy Association meeting, address Mrs. Meta R. Cobb, 175 Fifth Avenue, New York City.

SEPARATION OF THE

Distal Radial Epiphysis

HERBERT C. FETT, M.D., F.A.C.S.

Brooklyn, N. Y.

IN the treatment of fractures, the doctor encounters many problems unusual in the general art, and the condition discussed in this paper is one of those frequently presenting itself.

Each case represents a specific entity, produced by force and associated or complicated by soft tissue damage. The treatment involves mechanical and physiological factors all tending toward the achievement of perfect anatomical, physiological and economical end results.

BEFORE discussing the epiphyseal separation itself, let us refresh our memories by very briefly reviewing the anatomy and physiology of the parts involved. The center of ossification of the distal radial epiphysis appears in the second year and unites about the twentieth year. This portion of the radius is the site of most of the growth of this bone. Therefore, inasmuch as the development of the bone may or may not be involved in trauma confined to this location, serious consideration must be given to the proper treatment of such injuries, but as I shall endeavor to point out, we should not be dismayed or unduly alarmed if we fall short of obtaining perfect anatomical alignment. In addition to the epiphyseal factor, the adjacent joints merit consideration, namely, the radiocarpal articulation comprising the radius, navicular, lunate and triangular. The distal radio-ulnar joint with its discus

articularis is a true joint, but with little motion, the major portion of pronation and supination taking place at the proximal radio-ulnar joint.

SEPARATION of the distal radial epiphysis is brought about by a force—usually a fall—applied to the extremity, with the wrist in hyperextension. The impetus is transmitted to the lower end of the radius, the taut flexor muscles are splinted, the dorsal carpal ligaments hold fast and the force of action is at their insertion, which is just below the epiphyseal line—thus producing a deformity which is similar clinically to the silver-fork deformity of a Colles' fracture. This is readily differentiated by lack of bony crepitus. In addition to the osseous damage, there will also be found considerable soft tissue involvement depending to a great extent upon the length of time which has elapsed since the injury and which also may be a very important factor in convalescence, especially in regard to the time element.

Just as in other fractures, reduction at the earliest possible moment is most desirable, and should be done under general anesthesia. Our policy has been to attempt reduction immediately and when satisfied that we have accomplished all that we can, the extremity is immobilized by means of a molded sugar tongs plaster of paris splint with the hand in palmar flexion

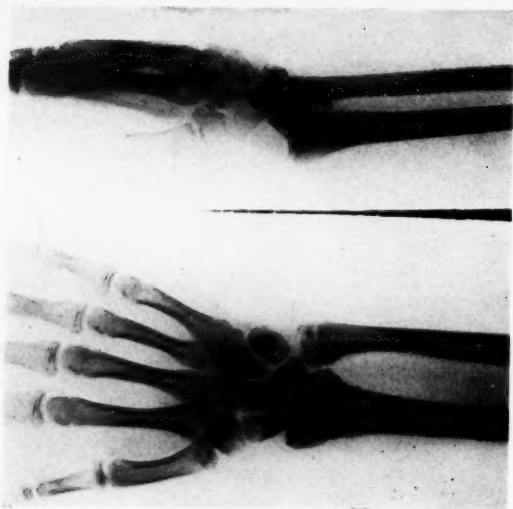


Fig. 1 *M.G. 7-8-40 Separation of lower radial epiphysis with very marked displacement.*

and ulnar deviation. It is then elevated above the body by suspension straps attached to the bed. If upon x-ray examination the position is satisfactory, then at the end of one week the hand is brought into neutral position, another sugar tongs is applied and kept on for a period of three weeks with frequent inspection for any evidence of untoward clinical manifestations. When about four weeks have elapsed since the injury, all immobilizing apparatus is removed, active motion is encouraged and very quickly obtained without the use of physical therapy.

OCCASIONALLY we have been dissatisfied with our attempts at reduction, and have tried to improve upon them, but unless this is done rather quickly, we have found that considerable union has taken place and that all we have succeeded in accomplishing is further traumatizing of

the soft tissues.

Careful analysis of end results in this series of cases, only two of which are being submitted for publication, has left us with the conviction that considerable residual displacement of the distal radial epiphysis is not incompatible with excellent anatomical, physiological, and economical results, and that very little damage, which might interfere with proper growth results therefrom, certainly in no way comparable to that caused by disease, or by injury to a similar site in a weight-bearing bone.

In this series of cases the follow-up period covers a range of from three months to three years, and we feel that premature fusion of the epiphysis is a most unlikely complica-

tion and does not occur unless the normal time of fusion is close at hand, in which case it may take place a short time ahead of the uninjured extremity. Likewise permanent bony deformity or functional loss need not be anticipated even though, roentgenographically, reduction is not satisfactory.

54 EIGHTH AVENUE

Fig. 2

M.G. 1-7-41 No reduction. Adjustment taking place with satisfactory alignment.

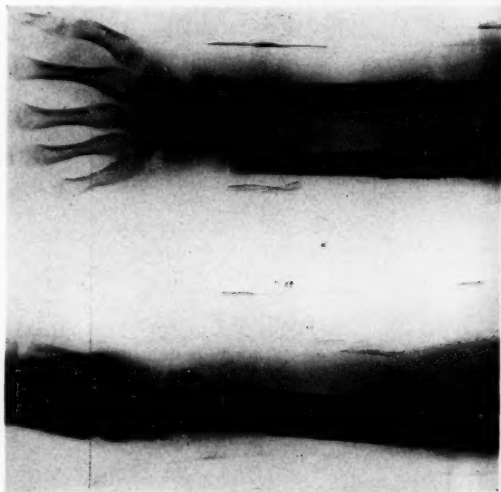


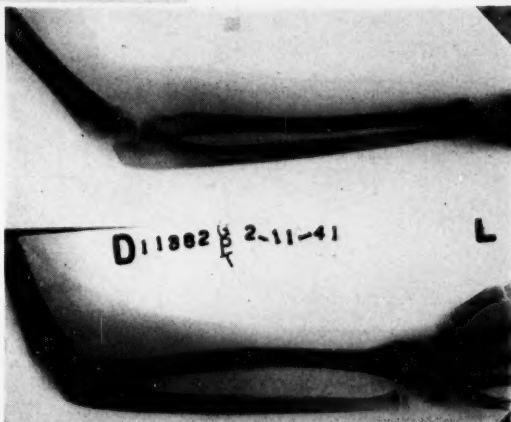


Fig. 3

A.DeS. 12-20-40 Separation of lower radial epiphysis with displacement and angulation.

Fig. 4

A.DeS. 2-11-41 Same case,—adjustment taking place without any attempt at reduction.



Discussion by Kenneth T. Young, M.D., F.A.C.S.

THIS paper of Dr. Fett's was extremely interesting to me because it emphasized the importance of functional results in these cases rather than resorting to elaborate surgical procedures in an effort to obtain anatomic restoration of the parts. I believe this is the most important decision that traumatic surgeons have to make; that is, to realize the degree of variation from anatomic restoration that is compatible with an end result which will satisfactorily function.

I prefer to leave these cases encased in a plaster support for a total of six weeks rather than four weeks because of the age of the

patient; they and their playmates are rather rough and I feel more secure with the additional two weeks.

I should like to point out that in the matter of immediate elevation after reduction and encasement in plaster it is not sufficient to have the hand higher than the shoulder but the elbow must be higher than the shoulder and the hand in turn higher than the elbow.

I should also like to demonstrate a technic of reduction of this slipped distal radial epiphysis

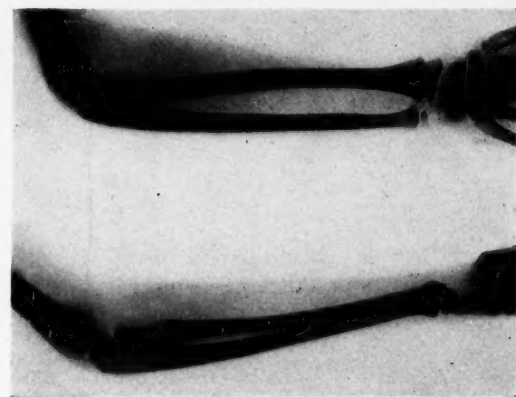


Fig. 5

A.DeS. 3-17-41 Same case with further adjustment taking place.

which is also applicable to the Colles' fracture. Facing the patient with the forearm in the thumb-up position the operator's fingers are interlocked beneath the lower end of the ulna. The thenar eminences of the hands are so placed that the one on the external side of the patient's wrist is toward the elbow directly over the displaced fragment. The other thenar eminence of the operator is distal from that at the extreme end of the radius. The operator's hands are firmly squeezed together, the external hand being pressed inward and downward away from the pa-

tient's elbow, by pressure and force dragging the displaced fragment back to its normal position and then carried beyond that, pressing the hand and wrist into extreme palmar flexion and ulnar deviation (Cotton-Loder position).

I have found this technic to be very simple and entirely satisfactory in every case. In fact, in fresh cases there is no need for general anesthesia to accomplish results without undue pain for the patient.

Read before the 43rd annual meeting of the Associated Physicians of Long Island at St. Catherine's Hospital, Brooklyn, N. Y., January 25, 1941.

ASSOCIATED PHYSICIANS OF LONG ISLAND

*Minutes of the 129th Regular Meeting,
June 10, 1941, Glen Cove, L. I.*

THE 129th Meeting of the Associated Physicians of Long Island was held in Glen Cove, L. I., Tuesday, June 10, 1941, with a Clinic Day and Executive Session in the North Country Community Hospital, and a most delightful dinner at the Nassau Country Club. The day was perfect for golf and many more than the usual number took the opportunity to play.

At 3 P.M. the Staff of the North Country Community Hospital presented the following fine program. Dr. George E. Anderson, Chairman of the Scientific Committee, presided.

1. Clinical Use of Plasma. By Dr. J. Wesley Bulmer. Discussion opened by Dr. Edwin J. Grace.
2. Influenzal Meningitis, with Report of a Case. By Dr. Ralph M. Burns. Discussion opened by Dr. Kenneth G. Jennings.
3. Calcine Deposits in the Shoulder. By Dr. Stanley J. Makowski. Discussion opened by Dr. Donald E. McKenna.
4. Hemorrhage in Pregnancy and During Labor. By Dr. Richard L. Jones. Discussion opened by Dr. Bruce Harris.
5. Medical Treatment of Urinary Tract Infections. By Dr. L. Stewart Ayars. Discussion opened by Dr. Augustus Harris.

The Scientific Session ended on time at 5 P.M., and the President, Dr. Harold R. Merwarth, called the Executive Session to order. Dr. C. Douglas Sawyer, Chairman of the Membership Committee, presented twenty-eight Candidates for Membership, and their unanimous election followed. The

Association welcomes the following new Members:

Dr. Laurence S. Ayars, Roslyn Heights; Dr. Ralph M. Burns, Hicksville; Dr. Paul H. Sullivan, Great Neck; Dr. Julius Tenke, Glen Cove; Dr. Gerald T. Lilly, Jamaica; Dr. Alfred A. Trivillino, Jamaica; Dr. Raphael J. DiNapoli, Brooklyn; Dr. John J. Giney, Brooklyn; Dr. John F. Wolfram, Ridgewood; Dr. Rowland W. Jones, Center Moriches; Dr. Richard M. Arkwright, Huntington; Dr. A. Sidney Barritt, Jr., Brooklyn; Dr. George J. Brancato, Brooklyn; Dr. Howard W. Brondum, Brooklyn; Dr. Charles H. Iltis, Glendale; Dr. Donald J. Manning, Brooklyn; Dr. John H. Mehring, Brooklyn; Dr. John L. Paladino, Brooklyn; Dr. Frederick A. Pizzi, Brooklyn; Dr. Gregory L. Robillard, Brooklyn; Dr. William W. Samuelson, Brooklyn; Dr. Thirl E. Jarrett, Brooklyn; Dr. George F. Loehfelm, Brooklyn; Dr. B. P. MacLean, Huntington; Dr. V. C. Webb, Mineola; Dr. V. K. Young, Riverhead; Dr. Charles Egelhofer, Ridgewood, and Dr. Delzon N. Cott, Hempstead.

Doctors Frank Overton and William E. Butler were elevated to Emeritus Membership.

Dr. David Overton, having entered the State Health Service, resigned from the post of Assistant Secretary. He was elevated to Honorary Membership in recognition of his many years of service to the Association. Dr. William C. Carhart was unanimously elected in his place.

After an excellent dinner, which was attended by 104 Members, the President, Dr. Harold R. Merwarth, introduced the following Speakers:

Lieut. Col. William E. Lippold, U.S.A.
Commander Ralph C. Kephart, U.S.N.
Bernard (Barney) Capehart, Aviation Expert of Colliers.

The speeches were timely in that Military Affairs were discussed.

The Associated Physicians are indebted
—Concluded on page 374

C A N C E R

Department Edited by John M. Swan, M.D. (Pennsylvania)
F.A.C.P., Executive Secretary, New York State Committee of
the American Society for the Control of Cancer. Assistant
Editors: Charles William Hennington, B.S. (Rochester), M.D.
(Hopkins), F.A.C.S., and Robert Lee Brown, A.B. (Michigan),
M.D. (Harvard).

Survivals OF PATIENTS TREATED FOR CANCER

in the University Hospital, Syracuse, N. Y.

GEORGE S. REED, M.D.
Syracuse, N. Y.

I SUBMIT the following report of all cases of cancer admitted for treatment to the University Hospital during the year

Reported at the Sixteenth Annual Meeting of the New York State Committee of the American Society for the Control of Cancer, held in Rochester, N. Y., December 10, 1940.

1931. Of the 112 cases admitted during this year, we have been able to trace all except five.

Summary

OF the 112 cases of cancer admitted to the University Hospital in 1931, there were 22 five-year survivals (19.6 per cent).

	No. of Cases	Average time before Treatment	Remarks
Bladder	6	7½ months	One alive after eight years.
Breast	18	10 months	Ten alive after five years. Six alive after eight years.
Cervix	8	12½ months	One died of pneumonia. Two missing.
Cheek	1	4 months	Lived seven years; died of arterial disease.
Finger	1	26 months	Alive after eight years.
Gastro-intestinal Tract:			
Esophagus	1	26 months	
Stomach	9	5 months	
Appendix	2	2 weeks and 3 mos. (respectively)	One alive in eight years.
General abdominal	3		
Ascending colon	2		
Transverse colon	2		
Colon	2	8 months	One case alive after eight years.
Sigmoid	2		
Rectum	2	9 months	
Liver	9	9 months	
Gallbladder	2	3 years and 3 mos. (respectively)	
Pancreas	2	2½ months	(Of these 38 cases, two alive after more than five years; 35 died in less than one year). Both missing.
Hand	2	21 months	One lived one year; one lived two years.
Hodgkin's	2	4½ months	All lived less than one year.
Lung	4	2¼ months	One alive at 8 years; one alive at 9 years.
Neck	2	5½ months	One dead in less than 1 year; 2 lived five years.
Ovary	3	1½ months	

	No. of Cases	Average time before Treatment	Remarks
Parotid	1	3 months	Died in less than a year.
Pelvis	1	1 month	Lived one year.
Pleura	1		Probably metastatic; dead in one year.
Prostate	10	14 months	9 dead; one lived just 5 years.
Scalp	1		Still alive (1940).
Skin	1	12 months	Dead.
Tongue	2	9½ months	Dead.
Thyroid	2	16 months	One dead in one year; one lived six months.
Tonsil	1	2½ months	Dead.
Uterus	7	7 months	Dead.

These five-year survivals are grouped as follows: Bladder, 1; breast, 10; gastro-intestinal tract, 2; neck, 2; finger, 1; ovary, 2; prostate, 1; thyroid, 1; scalp, 1. Over 57 per cent of the 112 cases died in less than one year—treatment or no treatment.

I call your attention to the average

length of time before treatment, after symptoms had appeared, for each group. Is it any wonder that our five-year cures average only 19.6 per cent?

Of the 134 cases of cancer admitted to the University Hospital in 1935, we have been able to trace all except five.

	No.	Months before treatment	Dead	Missing	Five-year survival	Remarks
Arm	1	1			1	
Bones	1	2	1			Probably metastatic.
Bladder	5	13	5			
Breast	30	5½	19	1	9	Radical breast 24 X-ray therapy 12
Cervix	3	22	2		1	Radium treatment.
Cheek	2	8	1		1	Electric coagulation and removal.
Gastro-intestinal						
Stomach	14	8	13		1	
Gen. abdominal	4	46	4			
Colon	3	8	2		1	
Ascending colon	1	12	1			Metastatic.
Descending colon	1		1			
Transverse colon	2	5	1		1	Resection.
Sigmoid	5	17	3	1	1	
Rectum	14	11	12	1	1	Well until 1940. Recently died of cardiac disease.
Cystic duct	1	36	1			
Liver	2	7	2			
Gallbladder	1	9	1			
Pancreas	1	4	1			
Hodgkin's	1	6	1			(Forty-nine Gastro-intestinal cases —5 alive after 5 years; 33 d'd not live 1 year).
Kidney	1	4	1			
Lung	4	25	3	1		
Lip and nose	1				1	Excision.
Neck	1	2	1			
Ovary	5	12	4		1	
Pelvis	1	14	1			
Penis	1	9			1	
Prostate	14	16	12		2	Amputation. (Both transurethral. 1 other died of pyelonephritis at nearly 5 years.)
Parotid	1	3			1	Resection and x-ray treatment.
Submaxillary gland	1	24			1	Radium needles, mixed tumor.
Spine	1	1	1			Metastasis.
Tongue	2	4½	2			Inoperable. Radium in one case.
Thigh	1	6			1	Neurofibrosarcoma.
Thyroid	3	19	1	1	1	Thyroidectomy and x-ray.
Uterus	4	6	1		3	
Vulva	1	3	1			

Of the 134 cases of cancer treated in 1935, there were 29 five-year survivals or 21.6%. The five-year survival group is comprised as follows: Arm 1; breast 9; cervix 1; cheek 1; stomach 1; colon 1; transverse colon 1; sigmoid 1; rectum 1; lip and nose 1; ovary 1; penis 1; prostate 2; parotid 1; submaxillary gland 1; thigh

1; thyroid 1; uterus 3. Over 40 per cent died in less than one year—treatment or no treatment.

I have specified the average length of illness of the various groups before treatment. The consequence of delayed treatment cannot be too emphatically impressed upon the people and the profession.

CONTEMPORARY PROGRESS

The Value of Calcium in Labor and in Uterine Inertia

G. D. PATTON
and R. D. MUSSEY
(American Journal of Obstetrics

and Gynecology, 41:948, June, 1941) report a study of the effects of the administration of calcium during labor. This study was undertaken for two reasons: To determine whether calcium would relieve labor pains and to determine the effect of calcium on the contractibility of the human uterus during labor. Calcium gluconate was given intravenously to 26 women who were either in labor or "were undergoing attempted induction of labor." In 11 cases graphic tracings of uterine contractions were made by means of an air-filled balloon, placed on the abdomen over the region of uterine prominence, and a kymograph. A 10 per cent. or sometimes a 20 per cent. solution of calcium gluconate was employed; the rate of injection did not exceed 4 cc. per minute; the dosage varied from 10 cc. of the 10 per cent. solution to 20 cc. of the 20 per cent. solution. It was found that the calcium injection did not relieve labor pains in any case, and in some cases appeared to increase the pain. Definite stimulation of uterine contractions was observed in 23 of the 26 patients. Two of the 3 patients who showed no response



to the calcium injection were not in labor at the time the calcium was given. The increase in uterine contractions was of short dura-

tion in 3 of the 23 patients who showed a response to the injection; in 4 others no progress of labor was noted, in spite of the increased uterine contractions; in one of these patients cesarean section was done, because of pelvic-fetal disproportion. In the remaining 16 cases, labor progressed "uneventfully" to delivery; 13 patients were delivered within four hours; delivery was spontaneous in all but one case, in which low forceps were used because of slowing of the fetal heart. In 5 cases regurgitation of the gastric contents with little or no nausea occurred during the injection. After the injection, the blood pressure increased slightly and the pulse rate decreased slightly, on the average. The effect of calcium on the uterine contractions as observed with the kymograph was to increase the intensity of the uterine contractions but not their duration, and to decrease the interval between contractions. The administration of such analgesic agents as pentobarbital sodium and paraldehyde soon after the calcium injection counteracted the effect of calcium on uterine contractions; in cases of uterine inertia

such analgesics preferably should not be given until after definite progress has been made. On the basis of reports in the literature, calcium should not be given if a drug of the digitalis group has been administered. As the injection of calcium tends to lower the blood sugar, glucose may be given intravenously if there is any evidence of hypoglycemia. From these studies, the authors conclude that the administration of calcium is of value in the treatment of uterine inertia in the first and second stages of labor, but it does not overcome severe dystocia. No evidence of any ill effect on the infant was observed in the authors' cases. They suggest that further studies of the effect of the administration of calcium in labor should be made, in order that the therapeutic value of this procedure may be more definitely evaluated.

COMMENT

Primary uterine inertia still remains the obstetrician's enigma. There is no complication in obstetrics more harassing to the physician or more disgusting to the patient. Of all the "helps" recommended, including calcium gluconate, none, except small doses of pituitrin (and these often fail), have been routinely successful. From our limited experience with calcium gluconate in primary uterine inertia we can heartily recommend its use, since it is perfectly harmless to mother or baby, but do not expect too much. It is far, far safer than even the small dose of pituitrin but not nearly so efficacious. No harm in trying it! H.B.M.

The Fate of Women with Glycosuria During Pregnancy

J. W. GROTT (*Acta medica Scandi-*

navica, 107:80, April 8, 1941) reports a follow-up study of 31 women who had shown glycosuria during pregnancy. In 13 of these patients, carbohydrate metabolism was normal, while 18 or 58.06 per cent. had diabetes. In the 13 patients without diabetes, examination showed definite evidence of a chronic pancreatitis in 8; in all pain was elicited by palpation over the pancreas, and in 4 instances there was definite enlargement of the pancreas; 3

patients also showed trophic changes in the skin. The diastase content of the urine was determined in 7 of these cases and was found to be high in 5 cases. Glucose tolerance tests were carried out in 7 cases, and showed a fairly normal blood sugar curve, although in several instances there was a definite delay in reaching normal levels; the maximum level was above 160 mg. per cent. in only 3 instances. Of the 18 women who showed definite diabetes following the occurrence of glycosuria in their

last pregnancy, 8 showed no signs of chronic pancreatitis, and their diabetes could not be related directly to pancreatitis occurring in pregnancy. In 10 cases, however, palpation over the pancreas was painful, and in 5 of these there was enlargement of the pancreas; trophic changes of the skin in the region of the pancreas were found in all cases in which examination for this symptom was made. The diastase of the urine was not above normal; the signs of chronic pancreatitis in these cases were somewhat obscured by the coexisting

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diabetes. Thus of 31 women who had glycosuria in their last pregnancy, 26, or 83.87 per cent., had a chronic disease of the pancreas—either diabetes, chronic pancreatitis, or both. It is evident that the occurrence of glycosuria during pregnancy cannot be regarded as of little importance. Every patient who shows sugar in the urine during pregnancy should be examined carefully for any signs or symptoms of pancreatitis; this is most necessary during the puerperium in order that proper treatment may be instituted if any evidence of persistent pancreatic involvement is found.

COMMENT

"Once a diabetic, always a diabetic" is undoubtedly a true axiom. But, as is well known but not always remembered, not every case of glycosuria during pregnancy means diabetes. The author found 58.06 per cent of 31 cases of glycosuria were true diabetics, which is somewhat higher than in the average clinic or private practice. It seems needless to say that every pregnant woman with a glycosuria should be rigidly investigated to rule out or confirm diabetes. Every physician doing obstetrics should make it his business to know "diabetes and pregnancy"—a hazardous combination in all instances; fatal unless properly managed. H.B.M.

Eclampsia and Post-eclamptic Hypertension

L. C. CHESLEY and W. H. SOMERS (Surgery, Gynecology and Obstetrics, 72:872, May, 1941) report a follow-up study of 155 women who survived eclampsia of pregnancy. At the Margaret Hague Maternity Hospital, Jersey City, 169 cases of eclampsia occurred in 167 women in 42,476 deliveries at the Hospital. There were 12 "immediate maternal deaths" in this group. Eight of the 155 survivors have died subsequently; 5 of these deaths were due to cardiovascular disease. Counting these 5 cases, the incidence of definite hypertension—blood pressure above 140/90—in this group of women is 17.52 per cent. The average age of the entire group at the time of the follow-up was 29.75 years, the average age of those with normal blood pressure 28.50 years, and the average age of those with

hypertension 34.30 years. The average length of follow-up was forty-eight months for the patients with hypertension and fifty-two months for those with normal blood pressure. The average incidence of hypertension in these post eclamptic patients is "significantly greater" than in the general female population when correction is made for age distribution. Renal function, as determined by the urea clearance and urinary specific gravity, was within normal range in at least 97 per cent. of these patients at the time of the follow-up. The majority of the patients with hypertension at the follow-up examination showed significant eyeground changes; half had cardiac enlargement and 8 showed signs and symptoms of cardiac insufficiency. In analyzing the factors that predispose to the persistence of hypertension in post-eclamptic patients, the authors find that hypertension is most apt to persist in women with some antecedent renal or vascular disease, in those in the older age groups at the time of eclamptic pregnancy, and in those who are obese. The most important factor, however, in "conditioning" remote hypertension is the occurrence of toxemia in pregnancy subsequent to the eclamptic pregnancy; very few women who had had "a single eclampsia" as the only toxemia of pregnancy showed subsequent hypertension.

COMMENT

The toxemias of pregnancy, with or without hypertension, remain one of the serious problems of the obstetrician. Etiology, of course, is still very obscure. In the past we have prevented the trouble or simply treated the eclampsia and hypertension, when it occurred, without knowing too much of the existing or residual pathology. Any follow-up study, therefore, of a large number of cases over 4 or 5 years is of prime importance. Very few such studies have been published. The authors have done a fine job and their findings are very helpful in evaluating the probable effects of future pregnancies and in prognosticating the outcome in certain types of maternity patients. More such follow-up studies should be undertaken with the idea of further reducing maternal morbidity and mortality incident to childbirth. Follow-up studies are always informative and therefore valuable. Read this one and be better prepared!

H.B.M.

The Advantages of Conservative Obstetrics

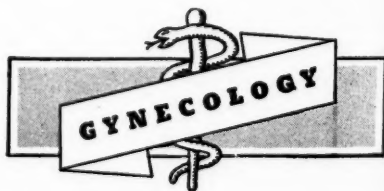
E. B. NELSON and D. ABRAMSON (*American Journal of Obstetrics and Gynecology*, 41:800, May, 1941) review 2,000 consecutive admissions at the Boston Lying-In Hospital, where conservatism in the management of labor is the rule. In none of the patients in this series was manual dilatation of the cervix employed. Cases of uterine inertia fairly well advanced are treated by stimulation; if the cervix is partially dilated and effaced, simple rupture of the membranes is often sufficient; small amounts of pituitary extract in 1 minim doses are employed in some cases, when not contraindicated. High forceps have also been abolished at this Hospital. Of the 2,000 cases in the series reviewed, 1,224 were primiparae. Of the 2,000 patients, 1,280, or 64 per cent., were delivered spontaneously; low forceps were used in 471 primiparas and 46 multiparas, mid-forceps in 17 cases; cesarean section was employed in 80 cases. Enemas are routinely used at the onset of labor to empty the lower bowel; the lithotomy position is used for delivery with the lower end of the table dropped; analgesics are used as indicated. After labor, patients are put in a "semisitting" position and encouraged to move from side to side, beginning routine exercise on the third day. Ergot is not given routinely, but only if there is evidence of subinvolution. If patients still show subinvolution by the tenth day, two-gallon sterile douches at 110° F. are given; this usually results in prompt improvement. There was some puerperal morbidity in 5.5 per cent. of this series. Patients returned for a check-up visit six weeks after delivery. In this series the perineum was healed and perineal support good in 1,694 cases, 84.7 per cent., at the six-weeks' check-up; perineal support was moderately good in an additional 108 cases. The cervix is not routinely inspected at the time of delivery; immediate suturing of the cervix is done only when there is hemorrhage. In the series of 2,000 cases, the cervix was healed and required no treatment in 1,381 cases, 69.05 per cent.; one application of silver nitrate to a small

erosion was necessary in 303 cases; 126 were treated once with the electrocautery; in 101 cases both silver nitrate and the electrocautery were used; the remainder required more than one treatment with silver nitrate or the cautery. A third-degree retroversion of the uterus was noted in 229 cases or 11.45 per cent., but caused no symptoms in 177 cases, or over three-fourths; in the remaining 52 cases, 90 per cent. were entirely relieved of symptoms by wearing a Smith-Hodge pessary for three months or less.

COMMENT

"Meddlesome midwifery" always makes for high maternal and fetal morbidity and mortality. This fact no doubt accounts for America's stationary maternal mortality rate for more than 50 years—up to 1936. Then, quite spectacularly, our figures dropped 50 per cent (in certain places even more), and why? Conservative obstetrics, coupled with sound obstetric judgment, is the only kind of obstetrics that should ever be taught or practiced. We have been "preaching" this type of obstetrics for twenty years with seemingly little success until, presto, the public became "obstetric wise" and then results became apparent. There is nothing like a widespread "crusade" to stimulate the profession to do better work. "Conservative obstetrics" should be the working slogan of every physician doing obstetrics—specialists included.

H.B.M.



Primary Ovarian Malignancy

J. E. HALL (*Brooklyn Hospital Journal*, 3:94, April, 1941) reports that in 394 cases of ovarian tumor treated at The Brooklyn Hospital from 1926 to 1937, the tumor was found to be malignant in 43, or 10.9 per cent. None of the patients in this series of malignant tumor of the ovary were under thirty years; over half (60.5 per cent.) were between the ages

MEDICAL TIMES, AUGUST, 1941

of forty and sixty years, the incidence being highest between the ages of fifty and fifty-nine years. Of the 27 patients in this series who were married, 13, or 30 per cent., had never been pregnant; 16 had never married or been pregnant; thus 69 per cent. of the group had never been pregnant. The duration of symptoms was six months or less in 33 cases, 76.9 per cent., one to three months in 21 of these. More than half the patients (25) had passed the menopause before the onset of symptoms. The two most common symptoms were enlargement of the abdomen and pain; other less common symptoms were loss of weight, pressure symptoms, weakness and vaginal bleeding. Bleeding, the author notes, is seldom caused by malignant tumor of the ovary. Operation was done in 38 of the 43 cases, but in 11 the condition was so far advanced that only laparotomy with biopsy was done. The primary operative mortality was 7 per cent. In 10 of the 11 cases in which only exploratory laparotomy was possible, symptoms had been noted for only six months or less and in 8 of these for three months or less. This indicates that cancer of the ovary is insidious in development, causing definite symptoms only when well advanced. In the cases that were operable, supravaginal hysterectomy with bilateral salpingo-oophorectomy was the most frequent type of operation (12 cases); complete hysterectomy with removal of both adnexa was done in 3 cases; less radical operations in the remainder. The most frequent pathological types were adenocarcinoma and serous papillary cyst-adenocarcinoma. Bilateral involvement of the ovaries was found in only 10 cases. Roentgen-ray therapy was but little used in the earlier cases in this series, but 10 patients have been treated with the roentgen rays; while 9 of these patients died, the duration of life was definitely prolonged as compared with those not so treated. Thirty-four patients who survived operation have been followed up; of these 30, or 88.2 per cent., have died from the malignant disease. Four patients are living and without signs of recurrence for three to five years; in 3 of these cases supravaginal

hysterectomy with bilateral salpingo-oophorectomy was done; this was supplemented by x-ray treatment in one instance. In the other case only exploratory laparotomy was done. The author considers that the prognosis of ovarian malignancy can be definitely improved only if diagnosis can be made before the symptoms of pain and abdominal enlargement develop. He suggests a pelvic examination of every woman over forty every six months. The treatment of choice is radical operation—hysterectomy with removal of the adnexa—followed by "extensive" postoperative roentgen therapy.

COMMENT

Primary ovarian malignancy is a rare lesion. By far the largest number of such tumors occur after 50. At 60 or more years of age every ovarian tumor—particularly cystic—should be considered malignant until proven otherwise. We can heartily agree with the author that when the diagnosis is fairly certain x-ray irradiation and later panhysterectomy with double salpingo-oophorectomy, followed by more deep x-ray therapy, is the ideal treatment. We can further state that in some apparently hopeless cases deep x-ray therapy accomplishes wonders—even rendering radical operation possible. In others it prolongs life when no operation is feasible. Don't forget deep x-ray therapy in cancer of the ovary—no matter how hopeless it may seem. Remember prophylaxis here, as in all cancer, is the keynote to success. Every woman 40 or more should be examined twice a year and after 60 three times a year for cancer—anywhere—but particularly in her reproductive system. This admonition, if heeded, would reduce the incidence of cancer in women to an unpredictable degree. "Preach it" to your patients and become "cancer minded" yourself and thus help to reduce cancer mortality.

H.B.M.

Preoperative Management of Uterine Myomas Complicated by Pelvic Infection

C. A. GORDON and A. H. ROSENTHAL (*American Journal of Obstetrics and Gynecology*, 41:1043, June, 1941) have previously described a method for the treatment of pelvic infections by iontophoresis with a choline compound. As the association of inflammatory conditions in the adnexa with uterine myoma

increases the difficulty of operation and the danger of peritonitis, this method of iontophoresis has been used in 39 cases of uterine myoma in which there was evidence of pelvic inflammatory disease, degeneration of the uterine tumor, or both. In 32 cases there was abdominal tenderness or peritoneal rebound pain; in 27 cases a firm mass in the abdomen was palpable; there was pain in 32 cases; and tender adnexal masses in 25 cases. The temperature was above normal in 25 cases; leukocyte counts were relatively low, being higher than 15,000 in only 13 cases. Sedimentation time was accelerated in all but 2 cases; this has been found to be a better index of "the presence and activity" of infection than the leukocyte count. In 28 cases the diagnosis of adnexal disease associated with uterine myoma was made, yet in 4 of these an unsuspected degeneration of the tumor was found at operation, and in one of these there was no pelvic inflammation. In 8 cases a differential diagnosis could not be made; at operation degeneration of the tumor alone was found in one case, pelvic infection alone in 4 cases, and both degeneration and infection in 3 cases. Hysterectomy was done in 32 cases, with removal of one or both adnexa in 27 cases. Preoperative treatment with iontophoresis of a choline compound was carried out in all these cases; the average number of treatments was six, given every other day; no patient was given more than twelve treatments. As a rule operation was done only when temperature, leukocyte count and sedimentation time returned to normal; if, however, temperature became normal, but sedimentation remained accelerated after one or two weeks, it was concluded that degeneration of the myoma rather than pelvic infection was the chief complication and operation was indicated. It was found that in those cases in which there was no degeneration of the tumor, but pelvic infection was present, the response to the iontophoresis treatment was prompt and favorable; pain was relieved in 75 per cent. of the cases; and the sedimentation time showed a return toward normal levels; usually to the normal of 80 minutes. In cases where degeneration

of the tumor was present, the response to iontophoresis was not favorable; the degenerative process seemed to be accentuated, as indicated by the acceleration of sedimentation time. In cases of uterine myoma in which the differential diagnosis between a complicating pelvic infection and degeneration of the tumor is difficult, the use of iontophoresis may be of value in "preventing undue preoperative delay while awaiting satisfactory laboratory data." If pelvic inflammatory disease is present, the time of preoperative preparation may often be definitely shortened and the operative risk decreased by this method of therapy.

COMMENT

Pelvic infection always renders operative treatment of fibroids more difficult. In the past we have, when possible, allowed sufficient time for the acute or subacute pelvic infection to "cool off" before operating, but this frequently consumed days and days—often weeks, which is, for obvious reasons, difficult if not impossible. The authors, to obviate this difficulty, have employed iontophoresis with good success. It cuts down the waiting time; there seem to be no dangers connected with its use and the operative risk is lessened. We have had very little personal experience with iontophoresis but see no reason why it should not be used. Certainly any plan of treatment that lessens the hazards of operation in these cases should be employed.

H.B.M.

A Study of 107 Cases of Uterine Bleeding With Endometrial Biopsies

G. F. DOUGLAS (*American Journal of Obstetrics and Gynecology*, 41:624, April, 1941) reports a study of endometrial biopsies in 107 patients with abnormal uterine bleeding; the number of biopsies per patient averaged 2.4, ranging from one to 24. It was found that immediately after menstruation was the best time to obtain biopsy specimens, but in cases where a number of biopsies were made, specimens were obtained at weekly intervals. The oldest patient in this series was sixty-nine years of age, the youngest fourteen; the average age was thirty-eight years. Very few of these patients gave a history indicating abortion or the presence of re-

tained placental tissue, yet placental tissue was found in 15 cases by biopsy, and was the cause of the bleeding. Malignancy was not suspected in any case in which biopsy was done, or a dilatation and complete curettage would have been the procedure of choice rather than biopsy. However, malignant tissue was found in 3 cases, or 2.8 per cent. of the series; the ages of these 3 patients were twenty-six, fifty-one and fifty-nine years respectively. Malignancy evidently is "no respecter of persons or age;" therefore every patient with abnormal bleeding should be given a thorough examination. Of the 267 biopsy specimens obtained, 95 were in the proliferative stage, 87 in the early and 8 in the late proliferative stage; there were 2 specimens showing glandular hyperplasia, one cystic glandular hyperplasia, 3 glandular dysplasia and 2 polypoid hyperplasia. In 23 cases the endometrium was atrophic. In a considerable percentage of these cases the abnormal bleeding was relieved, and the menstrual cycle became regular if four biopsy specimens were taken. In the author's opinion this indicates that in many cases abnormal uterine bleeding is "due to endocrine imbalance or endometrial disturbance" and the comparatively small amount of tissue removed by the biopsy curette is sufficient to restore the normal cycle. The use of the biopsy method in a special clinic has been found to reduce the number of patients that have to be admitted to the hospital for dilatation and

curettage, for it is often possible to make a correct diagnosis and give the necessary treatment in the biopsy clinic. If it were possible to carry out hormone assays in connection with the biopsy studies, the treatment of abnormal bleeding could be still further improved, the author believes, without radical surgery except for malignancy or some other definite indication.

COMMENT

Endometrial biopsies, in abnormal uterine bleeding, are of great help in arriving at a correct diagnosis. These, with hormonal estimations, are ideal methods of diagnosis in endocrine imbalance. No one could refute these statements. However, the older the patient the more dangerous endometrial biopsies become. We have reference, of course, to the occurrence of corporeal cancer. We have never believed that mere endometrial biopsies were a safe diagnostic procedure where the bleeding was not corrected by proper endocrine therapy or had persisted for any length of time. Corporeal cancer is most elusive. Cancer is no respecter of age—young and old alike are susceptible—yet it is a fact that the older the patient the more likelihood of cancer, and since the abnormal bleedings in younger women are most often endocrinal and not malignant, punch biopsies may be safe enough. Yet it cannot be denied that endometrial biopsies in women at 40 or past are dangerous procedures and hence thorough curettage is preferable. Remember the only sure "cure" for cancer is early diagnosis and complete removal before metastases have taken place. Don't take chances with cancer—make a diagnosis!

H.B.M.



A New Treatment for Hay Fever

E. J. ELSBACH (*New York State Journal of Medicine*, 41:1248, June 15, 1941) reports a new treatment for hay

fever; the desensitizing agent used is the product of the metabolism of *B. coli* from the human intestine grown on specific culture mediums; the cultures are incubated at body temperature, the bacilli killed by heat, the cultures filtered and diluted with physiological saline. So prepared these "metabolins" (Coli Metabolin Tosse) are a clear liquid. This metabolin product is given by intramuscular injection; pre-seasonal treatment is not necessary, but treatment should be begun as soon as symptoms

develop. Eight to twelve injections of 2 cc. each are given, the first five daily, the balance every other day. The treatment, therefore, is of short duration as no "maintenance doses" are required. The course of treatment may be repeated, however, if there is a recurrence of symptoms. It also avoids the necessity of tests to determine the allergen responsible for the symptoms. This method has been used in the treatment of 75 patients with hay fever; of these only one showed no improvement after six injections; 53, or 70.7 per cent., were completely relieved; 21 definitely improved. The average number of injections in the cured cases was seven and two-tenths; in the improved cases, nine and a half. While the best results are obtained if treatment is begun when symptoms first appear, good results have also been obtained in patients who had shown typical hay fever symptoms for some time.

COMMENT

We are not able to follow the rationale of this treatment in view of previous experience with hay fever. However, it will be tried and tested in the crucible of time and found useful or not useful.

L.C.McH.

Use of Laminagrams in Laryngology

SHERWOOD MOORE and his associates at the Washington University School of Medicine (*Archives of Otolaryngology*, 33:776, May, 1941) report the use of special x-ray technique for the study of various body sections (the laminagraph). The laminagraph and similar types of apparatus are designed to eliminate interfering images in the roentgenograms of certain structures "by imparting a coordinated, synchronized movement of x-ray tube and film about a fixed point during the exposure." This method of roentgenography has proved of special value in the examination of all parts of the respiratory tract. In the roentgenological examination of the paranasal sinuses, the laminagraph has been found of special value in the examination of the ethmoid and sphenoid sinuses. In these sinuses the laminagrams show the

size and position, anomalies and pathological conditions "far more clearly" than any of the standard roentgenographic procedures. For the study of the maxillary sinus the usual roentgenograms are generally sufficient, but occasionally a pathological condition in this sinus may be shown by laminagrams that was not indicated by the usual roentgenograms even with the use of contrast mediums; laminagrams may also be necessary for the diagnosis of certain conditions in the frontal sinus. Laminagrams are also of value in the study of the larynx; the mobility of the vocal cords can be demonstrated; also deviation of the air columns in the larynx; narrowing of the lumen by tumor or edema; and increase in size of the lumen by ulcerative processes. This method should prove to be of special value for the examination of the subglottic region, which is not accessible to direct laryngoscopic examination. For the examination of the paranasal sinuses, the patient lies in the prone position, with the plane of the face parallel to the top of the table; exposures are made at 4, 5 and 6 cm. from the plane of the face; these show the ethmoid cells and the sphenoid sinuses. If laminagrams of the maxillary or frontal sinuses are desired, additional exposures are made, for the frontal sinuses at distances of 0.5 and 1 cm., or occasionally at a distance of 1.5 to 2 cm.; for the maxillary sinuses at distances of 2 and 3 cm.

COMMENT

This is very excellent work and very useful in complicated diagnostic problems. The apparatus will hardly be available except in large institutions with extensive research facilities because of its complexity and cost.

L.C.McH.

Nasal Obstruction and Impairment of Hearing

M. R. JOHNSON (*Archives of Otolaryngology*, 33:536, Apr., 1941) reports a study of the hearing in 46 cases of nasal obstruction in which submucous resection was done on account of the nasal condition. None of these patients came to the clinic because of aural symptoms; only

one had a nonsuppurative chronic otitis; none gave a history of suppurative otitis. All were unable to breathe properly through the nose; the duration of the nasal obstruction varied from one to thirty years. This was accompanied by other symptoms, such as headache, postnasal discharge, sinusitis, frequent colds, and chronic cough. Audiograms were made in all cases before and after submucous resection; in 30 patients (65 per cent.) there was either no deficiency in hearing or only slight "tonal dip" for high frequencies. Following submucous resection patients who had shown some impairment of hearing did not necessarily show any improvement; a few showed slight improvement. Of 3 patients who had had tinnitus, one was relieved of this symptom. Submucous resection, however, definitely relieved the difficulty in breathing and improved the patient's general condition. A number stated that their colds and attacks of sinusitis were lessened; a few reported relief of chronic cough and postnasal drip. The author concludes that "nasal obstruction per se does not cause a characteristic impairment of hearing;" and that while submucous resection is often indicated in cases of nasal obstruction, it is "not to be recommended" as a procedure for improving deficiencies in hearing.

COMMENT

An excellent article with a much more extensive discussion of the problem than the above abstract indicates. The author decries the performance of submucous resection of the septum for the purpose of improving deficiencies of hearing. He does not object to its performance for the improvement of nasal ventilation. Improvement of nasal ventilation usually also brings about a more healthful condition of the mucous membrane of the nasopharynx and eustachian tubes and in this way lessens the probability of progressive catarrhal otitis. It probably in this manner at least helps in slowing the progress of a developing chronic nonsuppurative otitis media.

L.C.McH.

Transient Bacteremia Following Tonsillectomy

J. FISCHER and F. GOTTDENKER
(*Laryngoscope*, 51:271, March, 1941) re-

port bacteriological studies in 64 cases of tonsillectomy. On the basis of their preliminary studies, including animal experiments, a special culture medium, a peptone-glucose-brain bouillon modification of Rosenow's medium, was employed. In the 64 cases studied, the age of the patients varied from sixteen to sixty years. Local anesthesia was employed; in 44 cases, the operative procedure involved no difficulty; in 14 cases adhesions were found between the tonsils and the surrounding tissues; in 4 cases a tampon was sewed into the wound cavity; and in 2 cases it was necessary to ligate large vessels in the tonsillar niche. Blood cultures were made just before operation, just after operation, two hours after operation and twelve to twenty-four hours after operation. In 21 cases a positive blood culture was obtained only in the specimens taken two hours after operation; the preoperative cultures were all negative, and also the cultures made twelve or more hours after operation. In the positive cultures *Streptococcus hemolyticus* and *Staphylococcus aureus* predominated. No correlation was found between the organisms found in the blood culture and the organisms cultured from the tonsils preoperatively or the operative field postoperatively. In 53 of the 64 cases the postoperative course was normal; 9 showed a rise in temperature to 100.5° F. and 2 developed exacerbations of "old rheumatic conditions." Of the 44 cases in which the operative procedure was without difficulty, 9, or 20 per cent, showed positive blood cultures; while 9 positive blood cultures were obtained in 14 cases with adhesions; 2 in the 4 tamponade cases and one in 2 ligation cases. Thus it is evident that postoperative positive blood cultures occurred much more frequently where "extensive local manipulations" were required at operation. These findings indicate that transient bacteremia after tonsillectomy has no great clinical significance; only in patients with much lowered resistance is there any exacerbation of an old latent process. However, even such transient bacteremia may be largely prevented by avoiding "unnecessary coarse tearing or manipulation of tissues" at operation, and

by delaying operation until all acute inflammation has subsided.

COMMENT

It has long been known that a transient bacteremia follows mastoidectomy where local tissue trauma is great. It is quite interesting that it also follows tonsillectomy and follows the operation more frequently in instances where there has been much local tissue trauma. The author's plea for avoiding unnecessary coarse tearing or manipulation of tissue is a sound general surgical principle. Those of us who see many posttonsillectomic throats also know that the throats heal more quickly and are less painful when less trauma to the tissues has been incident to the operation.

L.C.McH.

Nasopharyngeal Tumors: Otolaryngological Aspects

J. W. BABCOCK (*Laryngoscope*, 51:451, May, 1941) notes that in non-malignant tumors of the nasopharynx, the chief symptoms are obstruction and bleeding; secondarily deafness, tinnitus and otitis media and mastoiditis may result. Bleeding is especially severe in fibromas and hemangiomas. Such nonmalignant tumors are often difficult to remove surgically and are best treated by implantation of radon seeds; in hemangiomas this may be supplemented by injection of a sclerosing fluid. Malignant tumors of the nasopharynx often cause no subjective symptoms, as they do not grow to any great size at their point of origin. It is only when they invade the base of the skull or metastases develop in the cervical lymph

nodes that their presence is suspected. In a group of 42 cases of malignant tumor of the nasopharynx under the author's observation, there was only one instance in which the tumor was discovered in the course of a routine examination, permitting treatment to be instituted early, but even in this case "it eventually caused the patient's death." Such tumors may cause nasal obstruction and bleeding, usually slight; these symptoms are not of sufficient severity to bring the patient to seek medical advice in the early stages. On examination, the tumor may resemble adenoids; a large tumor mass in the nasopharynx is found in only "a minority of cases;" sometimes only a small ulcerated area may be seen. Radiograms are useful chiefly for demonstrating any invasion of the base of the skull. Radiotherapy is the only treatment indicated; in most cases, the growth of the tumor is retarded, but cure is obtained only rarely. In the author's series only 14.5 per cent. could be considered cured for one to five and a half years. In one instance the patient had two recurrences and died nine and a half years after the primary tumor was treated. Including this case the average duration of life in those cases in which death was due to the malignant growth was nineteen months.

COMMENT

Statistics are useful in that they place experience upon a definite factual basis. This article confirms our general impression regarding these lesions.

L.C.McH.



Closure of Perforations of Membrana Tympani with Cargile Membrane

W. D. STIMSON (*Annals of Otolaryngology and Laryngology*, 50:178, March

1941) states that the epidermis of the membrana tympani and canal walls "does not proliferate and desquamize haphazardly;" an eardrum that has been repeatedly incised in childhood may show no evidence of scarring in adult life. The use of an artificial membrane, however, to close a perforation of the drum is of value to promote proliferation. The author has found that the "ideal material" to use for this purpose is the mesentery of sheep

which is marketed by surgical supply houses as Cargile membrane, and by drug stores as fish-skin condom. He usually employs the latter as it is thinner and easily available; it is "tough", moisture-proof, pliable, and not irritating to the tissues ("probably because it is an animal membrane"). It adheres easily to the drum membrane, and resembles it so closely in texture that it is often difficult to distinguish it without magnification. This membrane is never used to close a perforation of the eardrum when there are any signs of inflammation in the middle ear; if the perforation has been present several years, the edges are "touched" with trichloroacetic acid, and the resultant inflammation allowed to subside. The canal is cleansed of all cerumen, and any hairs present are trimmed down. The size of the perforation is estimated and the membrane cut at least 25 per cent larger. A "wisp" of cotton wound around a metal applicator is moistened and touched to the center of the membrane, which then adheres sufficiently to the applicator. It is applied through an ear speculum, which should be introduced as far as the isthmus of the canal, if possible. As soon as the artificial membrane comes in contact with the eardrum, "it seems to leap into position;" it is important, therefore, to center it exactly over the perforation before it touches; if this is not done, the artificial membrane may be "teased" into the correct position with a well-moistened applicator. In some cases in which the perforation has been too large to close without the artificial membrane sagging into the tympanum in the center, the size has been reduced by covering the anterior portion of the perforation first, and later the entire perforation. The author has used this method for closing "many" perforations of the tympanic membrane in the past seven years; it failed to adhere in only one case. In one patient who was a football coach, the closure of the perforation could not be done until the end of the football season; the result then was very satisfactory. In another case the eardrum was perforated a second time three years after the first repair by the same type of

accident; in both instances, healing was excellent; after the second repair the regenerated membrane could be hardly distinguished from the uninjured portion. The time required for healing has varied from ten to thirty days, and hearing has been normal after repair is complete.

COMMENT

Ingenious, practical and useful. The author reports his definite experience and is a reliable witness.

L.C.McH.

Bone Conduction Changes in Acute Otitis Media

J. H. HULKA (*Archives of Otolaryngology*, 33:333, March 1941) reports a study of bone conduction in 30 patients with acute otitis media; in 25 patients the otitis was of the purulent perforative type and in 5 patients of the acute congestive type. In 17 cases of the purulent type and in 5 cases of the congestive type the otitis media was unilateral. Wherever possible both ears were tested during the acute stage and again after complete disappearance of the inflammation; in a few instances only the diseased ear was retested; a total of 193 bone conduction tests were made on the 60 ears; an audiometer was employed for the tests. Thirty-eight ears were tested early in acute stage of the otitis media and retested as the inflammatory process subsided. It was found that in most instances (33 of 38 ears), there was an increase in hearing by bone conduction for the low tones; and as a rule (29 of 38 ears) a decrease in hearing by bone conduction for the high tones. The loss of hearing for high tones by bone conduction may be greater than indicated by the audiogram, as it may be masked by interference from the non-involved ear or by a linear increase of bone conduction. As the otitis subsides, there is a gradual decrease of the increased hearing for low tones through the bone; at the same time the bone conduction for high tones may be more depressed or may show recovery or no change. Before the inflammatory reaction subsides entirely, the bone conduction for low tones may be depressed

for a time below the level for the same ear when completely healed; at the same time the bone conduction for high tones shows definite improvement. Various explanations for the changes in bone conduction have been offered; on the basis of this study, the author makes the following suggestions to explain the changes observed: Acute inflammation in the tympanic cavity blocks the round window; this results in a general increase in bone conduction; but for the high tones this general increase in bone conduction "is more than counterbalanced" by the penetration of toxins into the basal turn of the cochlea. Either the effect of inflammation in the tympanum or that on the basal turn of the cochlea may be absent or diminished in some ears or at certain stages of the inflammation; this accounts for the atypical bone conduction curves observed in some instances.

Progressive Analogous Nerve Deafness in Three Successive Generations with Sex-Limited Inheritance

M. S. ERSNER and M. SALTZMAN (*Laryngoscope*, 51:241, March 1941) report 3 cases of familial deafness. The first patient seen was a girl eleven years old; her increasing deafness had been noted at school. Although there was a history of otitis media in infancy, the Eustachian tubes were normal and patent, the drums but slightly retracted. The patient had noted loss of hearing in the right ear first; she had no continuous tinnitus, but occasionally was conscious of a bell-like sound. The audiogram showed reduction of hearing for all octaves in both ears, the loss of hearing being greater for the higher octaves and in the right ear. The second patient is the mother of this girl; "in early youth" she had noted loss of hearing in the right ear; deafness became progressively worse, involving the left ear also. Tinnitus was noted when she began to menstruate and was aggravated by pregnancy. The Eustachian tubes were patent, the eardrums somewhat retracted. The audiogram was very similar to that of the first patient. The third patient is the grandmother of the first pa-

tient and mother of the second patient. In her case deafness began at the age of twenty-six years, the right ear being involved first. Tinnitus has been present many years. At the first examination she showed an advanced degree of deafness; there was loss of hearing for all octaves in both ears; the higher tones (4,096 d.v. and 8,192 d.v.) were not heard at all. In these cases the signs and symptoms are not typical of otosclerosis, but there is very definite evidence of sex-limited heredity. The deafness in each case is of exactly the same type, beginning first in the right ear; the audiograms are very similar, allowing for the progressive character of the deafness. All the male members of the family have normal hearing, but the deafness involves 50 per cent. of the females in each of three successive generations.

COMMENT

Further addition to the evidence that otosclerosis is a familial disease.

L.C.McH.

Patency of the Eustachian Tube in Relation to Profound Hearing Loss in Childhood

CHUN YUE MAO and WALTER HUGHSON (*Archives of Otolaryngology*, 33:824, May 1941) report a study of the patency of the eustachian tubes in 331 children with such a degree of loss of hearing that education in the Pennsylvania School for the Deaf was necessary; the majority had "no useful hearing" as shown by audiometer tests. The patency of the eustachian tubes was tested by a simple method of autoinflation; if pressure of more than 60 cm. of water was required to open the tubes, this was considered to indicate definite loss of patency. In 167 children in the age group nine to fifteen years, 105 were found to have patent eustachian tubes; 120 children had normal tympanic membranes, 42 thickening and retraction of the drum of various degrees, and 5 suppuration. In the 117 children in this group in whom nasoscopic examination could be made, 8 showed

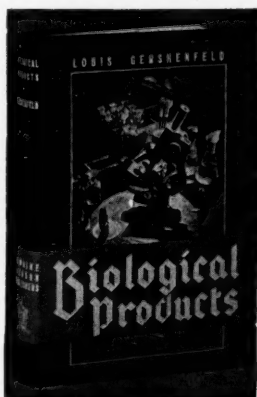
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Medical BOOK NEWS

Edited by

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All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

Krusen On Physiotherapy

Physical Medicine. The Employment of Physical Agents for Diagnosis and Therapy. By Frank H. Krusen, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 846 pages, illustrated. 8vo. Cloth, \$10.00.

THIS book is divided into 9 parts (each part is again subdivided into chapters). In his preface the author purposes a book for the medical student and the practicing physician. He does this job well. It is an admirable textbook. He attempts to handle, insofar as possible, each physical agent under 1—Introduction—definition—development—present status. 2—Physics. 3—Source, device or method of production. 4—Physiologic effects. 5—Technic of application. 6—Indications. 7—Contraindications, dangers and limitations. 8—Conclusions. He seems to be a prodigious reader, as evidenced by his references at the end of each chapter.



Classical Quotations

• I have lately seen another case presenting the combination of a pulse under thirty, repeated pseudo-apoplectic attacks, not followed by paralysis, and distinct valvular murmur with the first sound.

William Stokes.

Dublin Quarterly Journal of Medical Science, 2:82, 1846.

His chapter on "General Application of Heat" is good but the entire story of fever therapy by physical means is far from completely told, and in a few years this chapter may need complete revision. His chapter on the constant current is rather mal-apropos as compared to the experiences of other investigators. To disagree in so few things on such a commodious book is rather complimentary and we mean it to be so. It is a very good book and we heartily recommend it.

JOHN J. HAUFF

New Edition of Conybeare's Medicine

Textbook of Medicine. By Various Authors. Edited by J. J. Conybeare, D. M., Oxon. Fifth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 1131 pages, illustrated. 8vo. Cloth, \$7.50.

FIVE editions of Conybeare in eleven years mean that this 1100 page textbook of medicine has been accepted favorably by the profession, and upon close

survey the reasons for this reception are apparent.

Convenient size (8 vo.), weight (31½ pounds) and excellent typography make the volume attractive.

The list of contributors is brilliant.

These British write attractively and manage to introduce considerable personality into their routine presentations. And so it is in this volume. None of the articles are encyclopedic, but without undue contraction, they appear adequate.

The book will often be chosen from amongst its larger fellows for quick review of a particular subject.

FRANK BETHEL CROSS

Why Man Is Slipping

Man—The Mechanical Mifst. By G. H. Estabrooks. New York, The Macmillan Company, [c. 1941]. 251 pages. 8vo. Cloth, \$2.50.

THE thesis of this book by a Professor of Physiology at Colgate University is not new nor unique, as the author himself admits; but it is important. The old social Darwinian argument is presented—that our civilization is getting increasingly complex; that it takes brains to run it effectively; that man is undergoing a biological deterioration because the moron and the feeble-minded are outbreeding the gifted; because war and medicine operate dysgenically.

The book is popular, intended for the intelligent layman. The physician will find much of the early material familiar. But the last chapter offers an excellent general summary of the thesis that the busy physician may care to read.

Occasional passages many educators, physicians, and sociologists would strongly attack. That does not mean, however, that the essential thesis of Estabrooks is wrong. The reviewer would personally prefer less emphasis upon physical anthropology—arguments to the effect that we are deteriorating because we are getting toothless, developing bad hearts, manifest-

ing back breeding defects—and would think that arguments along the following lines would be less subject to assault: (1) it takes more brains than ever to run our civilization; (2) family stocks differ in genetic endowment and opportunities to pass on to their children the effects of favorable environment; (3) families of greater general intelligence and more than average cultural endowment are having smaller than average families while those at the other end of the scale are having larger than average families; (4) since intelligence, longevity, good health, and possibly other desirable qualities are inherited, we are breeding from the wrong stock; (5) education and social im-

provement are no substitutes for the effect of selective breeding; (6) therefore we are degenerating. The real effects are merely covered up by an advance in technology, a rise in the standard of living, and general cultural advance.

Most of these arguments are stated either explicitly or implicitly in Estabrooks, but sometimes they are not brought into sharp focus. Whatever can be said against this thesis, it merits much greater attention than it generally receives among our intellectual leaders.

NORMAN E. HIMES

A Pocket Anatomy

Aids to Anatomy (Pocket Anatomy). By Edward P. Stibbe, F.R.C.S. Tenth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 369 pages, illustrated. 16mo. Cloth, \$1.50.

THIS small work is essentially a pocket anatomy that covers in a brief manner the anatomy of the various systems of the body as well as joints, muscles, et cetera.

The text is briefly illustrated by black and white drawings, which for the most part are diagrammatic. From an anatomical point of view, the volume, as it states, is an aid to the student of anatomy, but may also be used as a reference book on this subject by the practicing physician

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and surgeon who wishes to refresh his mind on anatomy.

HERBERT T. WIKLE

Cardiology in Childbirth

The Heart in Pregnancy and the Childbearing Age. By Burton E. Hamilton, M.D. and K. Jefferson Thomson, M.D. Boston, Little, Brown and Company, [c. 1941]. 402 pages. 8vo. Cloth, \$5.00.

THE author has been actively engaged in the care of pregnant cardiacs at the Boston Lying-In Hospital from 1921 to the present. A twenty year experience under such circumstances gives great weight to his observations. The volume is divided into three parts:—Book I deals with The Cardiac in Pregnancy and the Chapter on the Delivery and Obstetrical After-Care of Cardiacs is written by Professor Frederick C. Irving. Book II considers the Physiology of the Circulation in Normal Pregnancy and in Pregnant Women with Heart Disease. Book III details the diseases of the heart occurring during pregnancy and the childbearing age. From this brief synopsis it is evident that the volume is most complete. It contains a wealth of information and present-day thought on the care and treatment of the pregnant cardiac.

This book should be widely read and studied. It will be worthwhile reading for every physician who does obstetrics and for every internist who may see pregnant patients with heart disease.

WILLIAM SIDNEY SMITH

New Edition of Kolmer's Laboratory Procedures

Approved Laboratory Technic. Clinical Pathological, Bacteriological, Mycological, Parasitological, Serological, Biochemical and Histological. By John A. Kolmer, M.D. and Fred Boerner, V.M.D. Third edition. New York, D. Appleton-Century Company, [c. 1941]. 921 pages, illustrated. 8vo. Cloth, \$8.00.

THE third edition of APPROVED LABORATORY TECHNIC, by Kolmer and Boerner, is a revised and up-to-date volume of this splendid and complete work on laboratory methods. It scarcely needs any comment, since the preceding editions have established so fine a reputation. This latest edition contains many new methods, including those for the estimation in the blood and excretions of the body, of thera-

peutic agents, such as the sulfanilamide groups and thiocyanates.

As in the preceding editions, the text is lucid, clear and concise, the illustrations are apt and explanatory. The methods described are orthodox and practical. It is to be hoped that in the next edition some space be allotted to the technique of virus isolation and identification. This edition is most heartily recommended to those who spend any time at all in a medical laboratory.

MAX LEDERER

Temperature and Man

Temperature: Its Measurement and Control in Science and Industry. Papers Presented at a Symposium held in New York City, November, 1939, under the auspices of the American Institute of Physics with the cooperation of National Bureau of Standards, National Research Council. New York, Reinhold Publishing Corp., [c. 1941]. 1368 pages, illustrated. 8vo. Cloth, \$11.00.

THE greater portion of this book will not appeal to the average reader of medical interests, since it is concerned primarily with discussions of fundamental physical or engineering problems.

In Chapter 1, however, is an excellent discussion by E. F. DuBois on "The Temperature of the Human Body in Health and Disease."

Chapter 5 is given over to a series of papers on "Temperature in Biology."

Chapter 6 is of definite medical significance, since it contains a series of papers on "Temperature and Its Regulation in Man." Although the topics discussed in this section are of definite interest in medicine, the number and diversity renders a detailed discussion impossible. This section is recommended to all interested in a series of expositions on temperature and man in its broadest sense.

G. B. RAY

Iodine and the Endocrines

The Endocrine Function of Iodine. By William T. Salter. Cambridge, Harvard University Press, [c. 1941]. 351 pages, illustrated. 8vo. Cloth, \$3.50.

THIS text is unique for its comprehensiveness. Minutest details concerning our knowledge of iodine are presented in a clear manner, so as to correlate the facts known, with the many clinical problems

in which iodine is important.

It is a valuable book because of its important reference value and because the author discusses in detail, not only iodine stores in body tissues and the circulating value of iodine, but also the endocrine balance and its relation to iodine metabolism. The relationship between the state of body metabolism and the role of iodine in endocrine function and dysfunction, such as thyroid, pituitary, and ovarian, is presented in a concise and understandable manner. Finally, an entire chapter is devoted to clinical problems in which iodine changes in basal metabolism are of practical importance.

This book is highly desirable, and its contents will be of value to the student who is interested in special features of iodine metabolism as well as to the general practitioner who will profit a great deal from the many practical considerations it contains.

EUGENE R. MARZULLO

Popularizing the Vitamins

Vitamins, What They are and How They Can Benefit You. By Henry Borsook, M.D. New York, The Viking Press, [c. 1941]. 212 pages. 8vo. Cloth, \$2.00.

HERE is a book that presents scientifically accurate knowledge of the vitamins. Yet it is written in as fascinating style as the most intriguing work of fiction. It reads along so well that it would seem that anyone, physician or lay person, would find difficulty in putting the book down.

The approach is popular but sound. The book is divided into sections on the relation of vitamins to health, vitamin units, a section on each vitamin, and additional chapters on diet and dental health, diets for children and adults, and "buying vitamins." Throughout, there is as much emphasis on "How They Can Benefit You" as on "What They Are," and constructive help is given.

The clearly written, well-turned phrases give the subject life and personality. Almost every page offers a phrase to quote—or to convince. It should be of great help in teaching, not only in the classroom, but in the physician's everyday

teaching of his patients. It may also be recommended to patients for reading. How much safer it is for them to receive their knowledge of vitamins from this book, rather than from the very persuasive but often misleading advertisements, radio, magazines.

The book is practical, too, and realistic. For instance, in the Appendix there is a section on "Vitamins for Those Who Eat in Restaurants." Consideration is given to the relationship of nutrition to public health, and to the national implications of good nutrition, which is a subject receiving so much emphasis at the present time.

ETHEL PLOTZ BERMAN

A Doctor's Random Thoughts

Health: Mental, Moral and Physical. By Horace W. Soper, M.D. Boston, The Christopher Publishing House, [c. 1941]. 109 pages. 12mo. Cloth, \$1.50.

THIS little booklet treats of many things and nothing in particular. Ostensibly concerned with problems of health, physical, mental and moral, the author deviates into a discussion of tobacco, weather, Old and New Deal, immortality, Robert Ingersoll, etc. These random thoughts are presented with strong personal bias. The average lay person may find it worth while to peruse these pages.

JOSEPH SMITH

Rectal Diseases

Proctology for the General Practitioner. By Frederick C. Smith, M.D. Second edition. Philadelphia, F. A. Davis Company, [c. 1941]. 466 pages, illustrated. 8vo. Cloth, \$4.50.

THE first two chapters on anorectal symptomatology are excellent, but why they come before embryology and anatomy, which is the third chapter, we cannot understand.

The need for a description of the surgical treatment of internal hemorrhoids may be debatable, but we doubt the need for the inclusion, in the chapter on Benign and Malignant Neoplasms, of surgery of the colon in a book intended for the general practitioner.

The type is excellent, the style makes the reading of the text easy, and the subject matter in this revision is up to date. Although the text is exceedingly brief on

many topics it is clear and covers the field of proctology fairly well.

Although the title of the book is "Proctology for the General Practitioner" the book would make an excellent brief text on the subject for the student of medicine.

CHARLES GOLDMAN

Study in Light Therapy

The Chemical Action of Ultraviolet Rays. By Carleton Ellis and Alfred A. Wells. Revised and Enlarged Edition by Francis F. Heyroth, M.D. New York, Reinhold Publishing Corp., [c. 1941]. 961 pages, illustrated. 8vo. Cloth, \$12.00.

ALTHOUGH but comparatively few years have elapsed since light therapy was first introduced, intensive research has resulted in a vast fund of information on the subject. This immense development has been gathered and classified, and is presented by the authors of this book in a most interesting manner. The text naturally is technical, as it must be to adequately cover a subject of this type in such complete detail. Of particular interest to the physician are the chapters on the various sources of ultraviolet light and on its biological effects. The industrial uses of ultraviolet light are covered in chapters which also warrant close attention. The application of ultraviolet light to the sterilization of water, milk and many other items is very well described. The book is well written and clearly printed and illustrated. It fills a definite need for an authoritative compilation of the subject for ready reference as well as actual study, and should be brought to the attention of every physician and not just those who

administer ultraviolet therapy.

JEROME WEISS

Nutrition

Dietetics Simplified. The Use of Foods in Health and Disease. By L. Jean Bogert, Ph.D. Second edition. New York, The Macmillan Company, [c. 1940]. 742 pages, illustrated. 8vo. Cloth, \$3.00.

AS the title implies, this book covers the wide field of nutrition in simple concise form. It includes brief consideration of the desiderata of normal nutrition in all phases of human life both normal and pathologic. The story of nutrition is told in a manner which will be readily understood by the layman interested in this field. Diet in disease is plainly outlined. The art of cookery is also covered. The practical aspect is thus well linked with the theoretical. The reviewer would commend this book for students in the field.

GEORGE E. ANDERSON

Birth Control

Techniques of Conception Control. By Robert L. Dickinson, M.D. and Woodbridge E. Morris, M.D. Baltimore, Williams & Wilkins Company, [c. 1941]. 56 pages, illustrated. 4to. Paper, \$.50.

THIS small brochure is packed full of sound information on the control of conception. The public is demanding contraception advice. The physician must be either in a position to give this advice and offer control methods or else know to whom he may safely refer such patients.

In either instance the physician must know how to manage the subject of the "Control of Conception" and certainly he cannot find more information in less space.

HARVEY B. MATTHEWS



BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

A Textbook of Ophthalmology. By Sanford R. Gifford, M.D. Second edition. Philadelphia, W. B.

Saunders Company, [c. 1941]. 470 pages, illustrated. 8vo. Cloth, \$4.00.

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Hernia. By Alfred H. Iason, M.D. In Three Sections. Historical Evolution of Hernial Surgery; Technical; Medico-legal Aspects. Philadelphia, The Blakiston Company, [c. 1941]. 1325 pages, illustrated. 4to. Cloth, \$15.00.

Magic in a Bottle. By Milton Silverman, Ph.D. New York, The Macmillan Company, [c. 1941]. 332 pages. 8vo. Cloth, \$2.50.

Dietetics for the Clinician. By Late Milton A. Bridges, M.D. Fourth edition. Philadelphia, Lea & Febiger, [c. 1941]. 960 pages. 8vo. Cloth, \$10.00.

The New International Clinics. Original Contributions: Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume II, New Series Four. Philadelphia, J. B. Lippincott Company, [c. 1941]. 299 pages, illustrated. 8vo. Cloth, \$3.00.

Accidental Injuries. The Medico-Legal Aspects of Workmen's Compensation and Public Liability. By Henry H. Kessler, M.D. Second edition. Philadelphia, Lea & Febiger, [c. 1941]. 803 pages, illustrated. 8vo. Cloth, \$10.00.

Plan for Convalescent Children in Hospitals and at Home. By Anne M. Smith. New York, A. S.

Barnes & Company, [c. 1941]. 133 pages. 8vo. Cloth, \$1.60.

Start Today: Your Guide to Physical Fitness. By C. Ward Crampton, M.D. New York, A. S. Barnes & Company, [c. 1941]. 224 pages, illustrated. 8vo. Cloth, \$1.75.

Elimination Diets and the Patient's Allergies. A Handbook of Allergy. By Albert H. Rowe, M.D. Philadelphia, Lea & Febiger, [c. 1941]. 264 pages. 8vo. Cloth, \$3.00.

Essentials of Endocrinology. By Arthur Grollman, M.D. Philadelphia, J. B. Lippincott Company, [c. 1941]. 480 pages, illustrated. 8vo. Cloth, \$6.00.

Foundations of Neuropsychiatry. By Stanley Cobb, M.D. Second edition. Baltimore, Williams & Wilkins Company, [c. 1941]. 231 pages, illustrated. 8vo. Cloth, \$2.50.

Life and Death at Low Temperatures. By B. J. Luyet & P. M. Gehenio. Normandy, Missouri, Biodynamica, [c. 1940]. 341 pages, illustrated. 8vo. Cloth, \$4.50.

Optical Activity and Living Matter. By G. F. Gause. Normandy, Missouri, Biodynamica, [c. 1941]. 162 pages, illustrated. 8vo. Cloth, \$2.75.

CONTEMPORARY PROGRESS

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adenoid tissue and 3 narrowing of the orifice of the eustachian tube; in one the orifice could not be seen. In the 164 children fifteen to twenty-one years of age, the eustachian tubes inflated normally in 101; the tympanic membranes were normal in 114. Nasoscopic examination in 132 of this group showed adenoid tissue around the orifice of the tubes in 14; but the eustachian tubes inflated normally in

7 of these cases. Forty-five of the children in the earlier age group gave a family history of deafness, but the deafness was not of the type that could be considered congenital; 38 in the older age group gave "a rather indecisive family history of deafness." These findings indicate that neither patency nor obstruction of the eustachian tube is an important factor in deafness in children of the "biologic" type, i.e., deafness that is evident at birth or develops within the first three years of life.

ASSOCIATED PHYSICIANS OF LONG ISLAND

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and extremely grateful to these three men for their splendid addresses.

All present were unanimous in their praise of Dr. Edwin A. Griffin, for his choice of Speakers, and for the manner in which the day's activities were conducted.

Essays in Competition for the William Browning Prize of \$50. in Cash

Competition is open only to members of the A.P.L.I. Essays of not more than 5,000 words, typewritten, double-spaced, un-

signed, distinguished by a motto containing name and address of the writer, must be received before November 1, 1941. Send essays to the William Browning Prize Committee of the A.P.L.I., 1313 Bedford Avenue, Brooklyn.

Award is to be made at the annual meeting in January, 1942, at which time the author of the essay receiving the award will read an abstract. The essay awarded the prize becomes the property of the Association for publication in our official organ, the *Medical Times*, unless it is otherwise arranged between the author and the Association. The original copy is to be bound and permanently filed in our archives.

The award at the annual meeting held on January 25, 1941, was made to Dr. H. Russell Meyers of Brooklyn for his essay entitled "The Significance of Cortical Extinction following Convulsive Seizures in the Human." Honorable mention was awarded to Dr. Edwin J. Grace of Brooklyn for his essay on "Temporary Phrenic Nerve Operation for Pulmonary Tuberculosis in New York City."

EDITORIALS



The Patient Comes First

A MOST candid discussion of the shortcomings of the large private hospital appeared in the August *Atlantic Monthly*. It was written by Dr. Miles Atkinson, of New York City. The views expressed were expected by him to "horrify some, disturb many, but perhaps be given consideration by a few."

The doctor insists that the patient should come first, his physician next, and the hospital last. He protests vigorously against any change in this order.

Dr. Atkinson sees the hospital's struggle for a precarious existence at the root of the trouble. The very bigness of these palaces, dating from the era of false prosperity, now bedevils their administrators; whatever exploitation of patient and doctor occurs is ascribed by Dr. Atkinson to their "parlous state." "Something very soon will have to be done about it. Half-hearted measures are of no use. The time has come . . . for drastic measures."

The doctor pulls no punches. "We treat

not James Smith, but No. 267774." The exploitation of the patient "is on a minute scale compared with that of the doctor, under the conditions in which medicine is practiced today." The hos-

pital is sometimes nothing but "a cheap diagnostic center at the expense of its unpaid staff, and arrogating to itself the right to dictate by whom the patient shall be treated, regardless of the interests of the patient." It is getting away with "practices today which verge on the dishonest. After all, in everyday life you do not surreptitiously put your hand in another man's pocket and then tell him, when found out, that he should be proud to contribute to your difficulties." Finally, says Dr. Atkinson, "All this boils down to the fact that the hospitals are abusing their position. . . . It is to be hoped that there will be no more of these huge structures, costly to build and costly to maintain." Dr. Atkinson is all for an increase in the number of smaller hospitals, which he thinks make for better ethics as well as better economics.

The article should be read as a whole

rather than by piecemeal, out-of-context presentation, which does it scant justice.

It is a formidable indictment; but there is hardly any humanly administered institution against which some counts can not be drawn at any time. For example, at the hands of Dr. A. J. Cronin, in the absorbing novel recently published by him, "The Keys of the Kingdom," some administrators of a great church come off rather badly. Nevertheless, Dr. Cronin leaves the church intact and even approves of it. Dr. Atkinson wants to see the last of the large private hospitals and does scant justice to their beneficent and scientific sides.

Future of the Voluntary Hospital

DR. RUFUS D. SMITH, provost of New York University, foresees the possible closing of many private schools, colleges and universities as a consequence of lessening endowments and lowering income returns. Population changes, mounting taxes and debt are flattening out the middle class.

President Corson of the Pennsylvania College Presidents Association sees the American college hard hit by defense activities unless the government recognizes the necessity of keeping it solvent as one of our biggest essential industries which perpetuates the American way of life by developing leadership.

A study by the John Price Jones Corporation of charitable bequests in seven large cities of the United States shows an ominous drop of millions during recent months, ascribed in part to the effect of the lend-lease bill. The drop for the whole country, inferentially, must be vast.

Such facts as we have cited obviously have some bearing on the fate of our voluntary hospitals, which are not now exactly affluent.

New York City's Public Health Institute

THE study of disease in the manner planned by New York City is a unique municipal project. It is fitting that research as well as preventive activities engage the talents of health departments. There is no good reason why all of such inquiry should

be left in present hands. Anyway, the volume of unsolved problems is too great for such hands alone. And then, some municipal problems are peculiar to themselves, requiring special handling.

The staff selected for this enterprise is impressive for its already achieved prestige in the field of research—Rivers, Opie, Sherman, Heidelberger, Baehr, Muckenfuss.

Influenza, the common cold, arthritis, and poliomyelitis await elucidation at the hands of this group.

This pioneering organization possesses further significance; it will furnish a model for the emulation of other municipalities, many of which will see the analogy in such handling of disease to industrial research, which has been so successful in integrating productive effort in the interest of the people.

The Exclusion of European Epidemics

IT seems to us that the recent reminder of Waldemar Kaempffert, science editor of the *New York Times*, to the effect that there are 50,000,000 persons in this country living in families with incomes of less than \$1,000 a year who are ill housed, ill fed and not in good health, must be first of all taken into account when studying the possibility, or likelihood, of epidemics now supposed to be on the verge of their first large-scale appearance in certain of the conquered and half-starved countries of Europe, notably Poland and the Balkans.

This problem may become ours as much as Europe's, because of the increased speed of mechanized transportation and because of the aforesaid condition of 50,000,000 of our people.

Where disease is concerned we are not easily isolated. The Nazis' germs may precede their armies and ideas as a menace.

"Clearly the insulation of this country from the disease consequences of war," says the *Journal of the American Medical Association*, "will prove a colossal task and will require the most careful planning and effort."

Typhus looms largest as a prospective threat.

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PROPHYLAXIS AND TREATMENT

OF

Diphtheritic Myocarditis

ALBERT G. BOWER, M.D., LEON ROSOVE, M.D.,

and Y. TOGASAKI, M.D.

Los Angeles, California

CIRCULATORY failure associated with toxic myocarditis is a frequent cause of death in diphtheria. This problem is important because it contributes a great many fatalities and also because of the prophylactic value of prompt recognition with immediate and adequate therapy. Most workers feel that death from circulatory failure may be classified into two groups: early and late. Early circulatory failure is an essential part of the diphtheritic toxemia while late circulatory failure is a complication of the disease occurring usually during convalescence associated with local inflammatory reactions incident to regeneration and repair. Recognition of these two syndromes is essential to adequate therapeutic management.

EARLY circulatory failure occurs from the second to the ninth day of the disease. The temperature is usually elevated; the pulse is rapid and thready; the heart is almost never enlarged; the heart sounds are surprisingly forceful; a systolic murmur is frequently present; there is

usually no disturbance in cardiac rhythm except as a terminal event; a protodiastolic gallop rhythm may become manifest; the blood pressure which has remained normal may drop at the time of death. As the toxemia progresses unconsciousness may suddenly develop and death occur.

Late circulatory failure usually occurs from the seventh to the fourteenth day or later. In contrast to the preceding clinical picture, the temperature may be normal or subnormal rather than elevated; vomiting is frequently present associated with epigastric abdominal pain and an enlarged tender liver; increased cardiac dullness occurs; tachycardia is followed by bradycardia; the heart tones, particularly the first sound, become indistinct and change in character with subsequent development of a protodiastolic gallop rhythm; premature beats occur frequently and the blood pressure becomes progressively lower. There is an anxious expression to the face and whiteness around the nose. As the severity of the illness progresses the patient becomes restless, cyanotic, lapses into unconsciousness and expires. Complete heart block, bundle branch block, auricular flut-

From the C. D. Service, Los Angeles County General Hospital and the School of Medicine, University of Southern California.

ter, auricular fibrillation, premature beats, nodal premature beats, and other arrhythmias may occur in this type of circulatory failure. The electrocardiographic tracings may show, in addition, T wave changes, ST interval changes, and other abnormalities.

THERAPY in the early stages of diphtheria consists of adequate doses of diphtheria antitoxin, complete bed rest and constant nursing care, adequate dietary and vitamin regimen, intravenous dextrose, and insulin. In pharyngeal and nasopharyngeal diphtheria the absorption of toxin is rapid because of the large vascular bed at the site of the membrane. Nevertheless, if treatment with adequate doses of antitoxin be instituted early, the fatality rate is low. When more than three days have elapsed prior to using antitoxin the fatality rate increases rapidly; antitoxin, alone, will not suffice—other measures must be added. It is to these neglected patients that particular attention must be directed to reduce the fatality from circulatory failure. During recent years, following the work of J. E. Gordon, previously of the Herman Kiefer Hospital in Detroit, and of Archibald Hoyne at the Municipal and Cook County Contagious Disease Hospitals, we have been able to prevent and reduce the mortality of diphtheritic myocarditis at the Los Angeles County General Hospital.

There is overwhelming evidence pointing to marked abnormality in carbohydrate metabolism in cases of diphtheria. It has been known for many years that there is a transitory glycosuria in the early stages. Lereboullet showed hypoglycemia to be common in severe diphtheritic toxemia. Schwentker and other workers have advanced the opinion that the degree of hypoglycemia parallels the severity of the infection. It is also felt that intravenous dextrose aids elimination by its diuretic action, and pharmacological studies by Edmunds indicate improved tone of the myocardium in experimental diphtheria in animals. In 1927 Gordon first used intravenous dextrose solutions routinely in early toxic diphtheria. Toomey reported its use enthusiastically in 1928. Early in 1934 Hoyne

gave routine intravenous dextrose to all diphtheria patients classified in the following groups: "1) those ill more than three days prior to receiving antitoxin; 2) 'bull-neck' types regardless of which day during the course of the disease antitoxin had been injected; 3) patients with marked albuminuria; 4) all postnasal cases and all malignant types of any character." By this procedure Hoyne reduced the fatality rate in desperately ill malignant cases to 9.8 per cent in contrast to a 30 to 60 per cent fatality rate otherwise expected—without dextrose. It was concluded, therefore, that to *prevent diphtheritic myocarditis, dextrose should be administered without waiting for physical signs to appear.* It has become good practice in these cases to administer insulin to facilitate the assimilation of this dextrose, probably through the usual glycolytic channels.

TREATMENT in late circulatory failure differs markedly from that of early circulatory failure because its mechanism is different. Although myocarditis has consistently been demonstrated clinically and at necropsy, in late circulatory failure evidence has been offered that it is not of primary consideration. Romberg showed that stimuli effective on the blood pressure of normal animals was ineffective on animals with experimental diphtheria. However, in animals intoxicated with diphtheria toxin, Edmunds showed that the heart responded adequately when the blood pressure could be raised, repeatedly resuscitating them even at the point of death. From further experimental and clinical observations he concluded that the primary site of involvement lies in the peripheral vasomotor mechanism. Brody also showed that the perfused heart of an intoxicated animal beats many hours after death. Thus the vasomotor center as the structure primarily affected is eliminated by experimental evidence. The ineffectiveness of epinephrine in far advanced circulatory failure in animals suggests that the trouble lies in the receptive substance at the myoneural junction. Additional experimental evidence is furnished by observations with pituitary extracts in intoxicated animals, in which a

good reaction occurs *provided the blood volume is adequate*. It is felt that involvement of the myoneural junction is not one of complete paralysis. On the basis of this evidence Edmunds proposes the theory that diphtheria toxin unites with the receptive substance and this results in loss of control of the splanchnic circulation. Thus relaxation causes a drop in blood pressure and produces a deficiency in the amount of blood returning to the heart, and the subsequent oligemia causes anemia of the medullary centers and death.

Therefore, to prevent a fatal outcome in late circulatory failure *heart stimulants such as digitalis are contraindicated*: caffeine with sodium benzoate has practically no beneficial effect. *An agent which will have a direct effect upon the blood vessels is needed*. Epinephrine has been found slightly useful in a few cases, but pitressin, the pressor principle of pituitary extract, is most valuable. Doctor J. E. Gordon first used this substance in the treatment of late circulatory failure from diphtheria and we have used it since 1932 with most satisfactory results. Pitressin is of no value in cases of early circulatory failure where the blood pressure is fully adequate. This preparation raises the blood pressure and, by furnishing an adequate supply of blood to the heart, promotes the general circulation, overcoming the deficiency in the peripheral circulation. It is very essential to supply the body with adequate fluids immediately preceding injection of the drug in order to avoid the reactions which otherwise follow, such as blanching of the skin, pallor, emesis and shock. While usually given in the form of intravenous dextrose, this fluid may be furnished by hypodermoclysis, or in suitable cases even by mouth. Blood pressure readings are taken and the drug is injected in amounts of 0.25cc. to 1cc. subcutaneously at suitable intervals until the blood pressure remains normal or higher than normal. Treatment must be strictly individualized. The action of pitressin is much longer in duration than that of epinephrine and is not followed by the compensatory fall so commonly noted previously when epinephrine was used in circulatory failure in diph-

theria. During the past few years we have added adrenal cortex (eschatin) in doses from 10 to 20cc. in order to sustain blood pressure. This has not been used routinely for prophylaxis.

IN a recent analysis of 753 consecutive cases of diphtheria entering the contagious unit of the Los Angeles County Hospital there were thirty-six deaths with a fatality rate of 4.8 per cent*. Fifty per cent of the deaths showed evidence of myocarditis either clinically or at autopsy. This latter group of cases was complicated by bronchopneumonia in eleven cases and by the "bull-neck" type in twelve cases, eleven of which had a tracheotomy.

In the 717 patients who survived, 278 cases had one or more electrocardiograms and twenty-eight of these (10 per cent) showed evidence of myocardial damage. Electrocardiograms were taken in consecutive patients during this period of study.

In the entire group of cases fifty-four were of the "bull-neck" type with twenty-one deaths (39 per cent). Two hundred cases had either tonsillar-pharyngeal, tonsillar-pharyngeal-laryngeal, nasal-tonsillar-pharyngeal-laryngeal, or nasal-tonsillar-pharyngeal-laryngeal-trachio-bronchial, with twenty-five deaths or a fatality rate of 11.5 per cent. This group of cases constitutes the most toxic type and does not include the nasal, tonsillar, or laryngeal cases.

* A paper is to be published completely analyzing these cases.

Conclusion

THE prophylaxis and treatment of the early and late types of circulatory failure occurring in diphtheritic myocarditis have been discussed. It is felt that with prompt recognition and adequate therapy the fatality rate may be materially lowered in the more toxic types of diphtheria. Treatment consists of adequate doses of diphtheria antitoxin, complete bed rest, constant nursing care, adequate dietary and vitamin regimen, prophylactic and therapeutic use of intravenous dextrose and insulin, and pitressin and eschatin when needed in the late type of circulatory failure.

—concluded on page 380

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EDITORIALS

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Population Pro and Con

GUY IRVING BURCH, Director of the Population Reference Bureau of Washington, D. C., is alarmed by Professor Carle C. Zimmerman's advocacy of four children to the family. Mr. Burch thinks that to increase the birth rate to an average of four children to the family would be "one of the most dangerous things that we could do." Such a program, he believes, would menace our economic well-being, the health of our people, and our democratic institutions.

Mr. Burch points out that despite the declining birth rate, the population is likely to increase more than 20,000,000 by 1980, or to a total of about 153,000,000. He can not see how these additional people are to be "healthfully supported and properly educated when at present about 45,000,000 are living at a level below the standards for health and efficiency." He is convinced that our best interests would be served by a smaller population. "We should systematically decrease our birth rate about 25 per cent during the next forty years." Mr. Burch quotes the Brook-

ings Institution on what should be a reasonable minimum aim of our national economy in order to set up a decent standard of living—"an increase in the production of all kinds of consumers' goods and services by something like 70 to 80 per cent."

It seems to us that the great gulf which separates Mr. Burch and the Harvard professor can be accounted for by the obsession that either smallness or largeness of population of itself will abate difficulties and abolish evils. A large population with a fair degree of social justice might permit a status preferable to that of a small population with gross inequities. A growing Hitlerized state would result in greater economic slavery than now exists anywhere, with "aggressive barbarians" instead of "passive barbarians" (Lewis Mumford's terms). A small political unit like Periclean Athens might be based on slavery, as was actually the case there. Just as Hitler would "solve" the problem by economic slavery, danger also lies in the social and moral slavery that a similarly imposed birth control dogma might entail.

Mere smallness or largeness is not decisive. It is the kind of social order we have which counts. A small population, in itself, would be no guarantee against perversion of power and a vicious distribution of wealth. We must shed both of Mumford's types of barbarism.

*P*nemonia

IN THE NORTH COUNTRY
COMMUNITY HOSPITAL,
1938 - 1940

WARREN IRVING TITUS, M.D.

Glen Cove, N. Y.

THIS report covers all of the patients admitted to the North Country Community Hospital from January 1, 1938 to December 31, 1940 who had pneumonia on admission or developed it while in the hospital.

The primary group consists of those patients who had on admission acute respiratory infection with consolidation in the lung demonstrated in every instance by roentgenogram or at necropsy. They all had the usual symptoms, such as chill, fever, cough, and pain in the chest. I have separated them into lobar and bronchial depending on whether the consolidation was localized or disseminated. The secondary group consists of those cases which occur as terminal events in patients admitted with serious chronic illnesses, or following injuries, operations or parturition.

Not having seen a report in the journals of pneumonia patients treated in a small suburban hospital, I was interested in checking our results with pneumonia to see how it compared with the results obtained in the large city hospitals. During the past three years we treated 184 cases of primary pneumonia with 20 deaths. These cases were about equally divided between private and ward cases.

IN analyzing the age group of the patients, it is noted that there were

seventy-six patients under the age of twelve with primary pneumonia and only two deaths, those occurring in children under one year of age. It will also be noticed that the death rate for each decade after the fortieth year steadily increased from about 15 per cent in the 40-60 year group to 37½ per cent in the sixty to ninety year group, the rate steadily rising with each decade. In the secondary group the mortality was 25 per cent in the patients under twelve, jumped to thirty per cent for the next two decades, then about fifty per cent for the patients thirty to sixty years, and then about 87 per cent for the next three decades. From these figures about sixty per cent of the people over sixty recovered from primary pneumonia but only 10 per cent from secondary pneumonia.

Although during every month of the year there are a few cases of primary pneumonia in this hospital, it begins to increase with cold, changeable weather, particularly in November. It increases until it reaches a peak in February, then slowly diminishes until the advent of warm weather in June, when it drops to only a few cases, and remains at a low level during the warm months. The secondary pneumonia cases do not show these seasonal variations.

The 58 cases of primary pneumonia in 1938 had a mortality of eleven cases. Only

The Age Incidence of All Patients Ill with Pneumonia 1938-1940

Age	1	1-3	4-6	7-12	13-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
Primary	15	27	12	22	10	10	16	25	23	13	6	5
Mortality	2	0	0	0	0	0	2	4	3	4	2	3
Secondary	0	1	1	2	7	9	8	21	19	12	6	5
Mortality	0	1	0	0	3	2	5	10	8	11	4	5

one of these patients was treated with sulfanilamide, a few with serum. The mortality was about 19 per cent. During 1939 and 1940 specific treatment was given to the entire 126 patients, and the mortality rate was only 7.1 per cent. In

chopneumonia. For the three years the mortality was 10.8 per cent. The patients with lobar pneumonia in the secondary group had a mortality rate for the three years of 28.2 per cent. In the broncho-pneumonia secondary group, the mortality

Seasonal Incidence of Pneumonia 1938-1940

MONTH	PRIMARY	MORTALITY	SECONDARY	MORTALITY
January	26	4	9	4
February	37	4	8	6
March	22	3	8	6
April	22	2	10	2
May	19	2	11	7
June	5	..	9	8
July	4	1	3	1
August	7	..	8	6
September	6	..	4	1
October	9	1	8	3
November	12	..	3	1
December	15	3	10	4
Total	184	20	91	49

1939 eighty-nine cases were treated with four deaths, a rate of only 4.4 per cent. Of this group 14 had bronchopneumonia with no mortality, although this group usually carries a higher death rate than lobar.

IN 1940 the number of patients were fewer, undoubtedly due to the fact that many pneumonias were cared for at home and only the patients who did not respond to chemotherapy were sent to the hospital. In this year the rate was 13½ per cent with no deaths in the five who had bron-

was 73 per cent. As will be shown later, many in this group had terminal bronchopneumonia. Ninety-one patients had secondary pneumonia with a death rate of 53.8 per cent. This I feel could be reduced.

Of the 184 cases of primary pneumonia, 117 patients had a specific organism isolated; in the secondary group 32 of the 91 cases. Until recently we did not have the use of mice in our laboratory to culture the pneumococci satisfactorily; and many patients were given one of the chemo-

The Incidence of Pneumonia at the North Country Community Hospital 1938-1940

	PRIMARY			SECONDARY		
Year	Lobar	Bronchial	Total	Lobar	Bronchial	Total
1938	45	13	58	9	18	27
Mortality	7	4	11 died 18.9%	3	14	17
1939	75	14	89	24	15	39
Mortality	4	..	4 died 4.4%	5	10	15
1940	32	5	37	6	19	25
Mortality	5	..	5 died 13.5%	3	14	17
Total cases 3 years	152	32	184	39	52	91
Total mortality 3 years	16	4	20	11	38	49
Percentage mortality 3 years	10.5%	12.5%	10.8%	28.2%	73%	53.8%

Bacteria, Treatment, and Results in 184 Cases Primary Pneumonia

Type	S.A.		S.A. with serum		S.P.		S.P. with serum		Specific serum		No Specific Therapy		All Cases	
	R	D	R	D	R	D	R	D	R	D	R	D	No.	D
1	1	..	..	..	12	..	2	..	5	2	..	..	22	2
2	..	..	..	..	9	..	1	..	..	..	..	..	10	..
3	1	..	..	..	15	3	..	..	..	..	3	..	22	6
4	1	..	..	..	8	..	..	..	2	..	1	..	12	..
5	..	..	1	..	6	..	1	..	3	..	1	..	12	..
6	..	..	..	..	..	..	..	..	..	..	..	..	1	..
7	1	..	..	..	6	..	..	..	..	..	..	..	10	2
8	1	..	..	..	6	..	1	1	..	..	..	..	9	1
9	..	..	..	..	..	..	..	..	1	..	1	..	2	..
14	..	..	..	..	4	..	..	..	..	..	..	..	4	..
17	..	..	1	..	..	..	..	..	..	..	1	..	2	..
19	..	..	..	..	2	..	..	..	..	..	..	..	2	..
Influenza	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bacillus	..	..	..	1	2	1	..	..	..	..	2	..	1	1
H. Strep.	3	..	..	..	2	1	..	..	..	..	2	..	8	1
No Specific Bacteria	2	..	..	..	28	2	..	..	..	..	30	5	67	7
	11	..	2	1	98	6	6	2	11	3	36	8	184	20

therapeutic agents before material was taken for sputum typing. As is well known the sulfonamides reduce the number of pneumococci in the sputum and so change them that they cannot be typed even after animal inoculation unless the material has been previously treated with para-amido-benzoic acid. In the future we hope to type all cases of pneumonia.

The highest death rate in any one type was in the type three group; twenty-two patients with six deaths, a mortality of 27 per cent. As this type usually affects older people, I feel that these cases should have both chemotherapy and serum.

ON examining the treatment given the primary pneumonia group, only 44 cases received no specific therapy with a

death rate of 18 per cent. This occurred in 1938. Fourteen patients were treated by serum alone with 3 deaths, a rate of 21.4 per cent. The two deaths in type I group were in serum-treated patients. 104 patients were treated with sulfapyridine alone with a loss of only 6 patients and three of those were in the type 3 group. Eleven patients were treated with one of the chemotherapeutic agents in addition to serum with three deaths. In the secondary group 48 patients were treated with a specific therapy with 13 deaths, a death rate of 27 per cent. Thirty-two patients were treated with sulfapyridine alone with a death rate of six cases or 18¾ per cent. The group in which no specific therapy was given includes all of the patients who died of terminal pneumonia. The death

Bacteria, Treatment, and Results in 91 Cases of Secondary Pneumonia

Type Pneumo.	S.A.		S.A. with serum		S.P.		S.P. with serum		No Specific Therapy		All Cases	
	R	D	R	D	R	D	R	D	R	D	No.	Died
1	4	..	1	1	..	..	6	1
3	3	..	1	..	..	1	5	1
4	1	..	..	1	1	1	4	2
7	1	..	..	..	1	..	2	..
8	3	..	1	..	1	..	5	1
9	1	..	..	1	..
16	1	..	..	..	..	1	1	..
17	1	..	..	..	..	1	1	..
18	1	..	1	..	..	..	..	..	2	1
22	1	..	..	..	..	..	1	1
23	1	..	..	..	..	..	1	..
H. Strep.	1	..	..	2	..	3	3
No Specific type	5	3	..	..	12	4	..	..	5	31	59	38
	5	3	..	1	27	6	3	3	8	36	91	49

rate was higher with each specific type in the secondary pneumonias than in the primary group.

On examining the cases which died in 1938 of primary pneumonia the use of one of the chemotherapeutic agents might have changed the result in the cases of Johnson, Linnekin, Fadrowsky, Kelly, Simonson. I doubt if anything could have changed the result with McLean, Korrow, Davis, Shepanski, Wallace or Sayre. The last case, Mrs. Sayre, was the first person to receive sulfanilamide in this hospital. Her x-ray picture showed the typical influenza appearance on first examination but it was not until the fourth day of her illness that the influenza germ was isolated from her sputum and blood culture. The sulfanilamide had no effect on her fever. Eighty c.c. of influenza serum was given on the fourth day with no effect. She also received three transfusions. Pericarditis developed on the fifth day, the day she died.

Of the cases which died in 1939, Dollard and Salthouse were both sick with symptoms of pneumonia for a week before admission to the hospital. It is doubtful if serum given to Dollard would have changed the outcome. Hegeman did

not receive serum until shortly before death and then experienced a shock reaction which undoubtedly contributed to her exit. I have never convinced myself that it is not dangerous to give an asthmatic patient serum.

Of the five patients who died in 1940, four had been sick too long to change the outcome very much. Baston lived 12 hours; he had been sick a week. Simon was semicomatose on admission and had a positive blood culture of type 3. White had been ill 9 days, had an empyema on admission, and a positive blood culture. Southard had three lobes of his lung involved on admission, was in circulatory failure, and went into coma within 24 hours. Weller was in circulatory failure on admission. The time to treat pneumonia is at the onset, and the longer one waits to give specific treatment, the less chance a patient has of getting well. We have had a few patients admitted to the ward service who were given small doses of the chemotherapeutic agents by doctors at their homes without benefit to the patients and the blood levels would be one per cent or less. The drugs must be given early and in large doses at the onset to affect the course of the disease.

Résumé of Patients Who Died of Primary Pneumonia in 1938

Case	Days sick	A	P	Age	Type	Blood culture	Extent	Complications before admission	After	Treatment
Johnson	7	14	67	P?		sterile	Lobar r.l.	Hemiplegia. A.S. heart disease	Pleural effusion	Oxygen Digitalis
McLean	6	2	56	P-3	P-3		Lobar r.l.	Delirium tremens Left empyema		Aspiration Sedatives
Korrow	2	3	48			sterile	Bronc. both lungs	A. Fibrillation Diabetes Obesity 330 lb.	Thrombosis Iliac Artery	Oxygen Insulin Digitalis
Linnekin	2	37	62	P-1	P-1	sterile	Lobar r.m.		Pleural effusion	Serum P-1 200,000 U Oxygen
Fadrosky	5	8	37	P-3	P-3		Lobar r.u.			
Davis	2	1	84				Bronc. both L	A.S. Heart disease		Oxygen
Kelly	4	10	50	P-1	P-1	sterile	Lobar r.l. & m.			Serum P-1 200,000 U
Simonson	2	3	77	P-7	P-7	sterile	Lobar r.l. & u.	A.S. Heart disease		Serum P-7 260,000 U
Shepanski	3	2	10 da.				Lobar r.u.	Secondary anemia		Transfusion
Wallace	5	7	53	P-3	P-3	sterile	Bronc. both L.	Syphilis. Recent coronary occlusion		Oxygen
Sayre	1	5	40	Influenza	Influenza bacilli		Bronch. both lungs	Cirrhosis Liver Nephritis Anemia	Pericarditis	S.A. 30 G. Mg. Serum 80 cc. Transfusion

Résumé of Patients Who Died of Primary Pneumonia in 1939 & 1940

Case Hart	Days sick		Age 3mo.	Type Hemo. strep.	Blood culture	Extent Lobar r.u.	Complications on admission Syphilis Anemia Nephritis A.S. Heart disease	After	Treatment Transfusion
	A	P							
Dollard	7	6	81	P-3	sterile	Lobar r.m.		Myocardial failure	S.P. 35 Gm. B.L. 3.9-4.2 Oxygen
Hegeman	1	9	47	P-8	sterile	Lobar r.l.	Bronchial asthma		Type 8 serum 300,000 U. S.P. 10 Gm.
Salthouse	8	3	44	?	sterile	Lobar r.&l.l.	Nephritis	Pericarditis Uremia	S.P. 6 Gm. B.L. 13.2
Baston	7	1	59	Hemo. strep. ?	sterile	Lobar r.&l.l.			S.P. 2 Gm.
Weller	2	4	64	?	sterile	Lobar r.&l.l.	Chronic emphysema	Myocardial failure	S.P. 18 Gm. B.L. 6-11
Simon	5	2	57	P-3	P-3	Lobar r.m. r.&l.l.	Paralysis agitans	Myocardial failure	Sodium S.P. 11 Gm. B.L. 5.5
White	9	4	62	P-7	P-7	Lobar r.l.	Empyema left chest	(300,000 U)	Aspiration Type 7 serum S.P. 9 Gm.
Southard	3	2	82	P-3	sterile	Lobar r.&l.l. r.m.	Diverticulitis A.S. Heart disease		Oxygen S.P. 9 Gm. B.L. 5.1

AS stated before, the secondary group consisted of those cases which occur as terminal events in patients admitted with acute episodes of serious chronic illness or following injuries, operations, or parturition. Of the 91 secondary cases 45 had had an anesthetic and operation. Of these 45 cases, 15 died. Of this group of 15 who died following operation, the anesthetic was given for 1½ hours to 2½ hours in 6 of the cases. This group I feel could be reduced by attention to the cleanliness of the patient's mouth and throat prior to giving anesthesia, a reduction in the length of time the patient is under the anesthetic, the use of local or spinal anesthesia when a long operation is contemplated, and the early treatment of shock and loss of blood during and after operations. I was also impressed by the fact that many of these postoperative pneumonias were not diagnosed or specifically treated for three or four days following the onset of fever and symptoms of pneumonia. The patients with decompensated hearts, blood dyscrasias, cerebral hemorrhage, coronary occlusion, and uremia all died when pneumonia developed. I feel that little can be done for these patients except attempt to prevent pneumonia in any possible way.

Forty-eight of the cases of secondary pneumonia were given specific treatment. The great majority received sulfapyridine

either alone or in combination with serum. Of the 48 patients so treated 13 died, a death rate of a little over 27 per cent. The mortality was higher in the patients with bronchopneumonia than in lobar pneumonia.

One hundred and fifty patients were given sulfapyridine. This includes patients with primary and secondary pneumonia. The majority received between 11 and 30 grams. Sixty-one per cent of the treated cases were free of the acute symptoms of the disease within 36 hours after the first dose.

TOXIC effects of the sulfapyridine were noted in about two-thirds of the cases. Vomiting was the most common symptom and the drug had to be discontinued in about 12 per cent of the patients. Leukopenia was found as a result of the drug in only two cases but no cases of agranulocytosis occurred.

Blood concentrations of sulfapyridine varied considerably in patients. The children showed a blood level of ½ mg. and the older group, particularly with nephritis or arteriosclerotic kidneys, showed very high readings, 9-16 mg. An effort was made in most cases to keep the level between 4 and 6 mg.

Serum was given to thirty-three patients

Sulfapyridine in the Treatment of 150 Cases of Pneumonia

Dosage of Sulfapyridine	Recovered	Died	Average Blood Level
Less than 5 Gm.....	22	4	1.6
6-10 Gm.....	28	3	3.4
11-20 Gm.....	41	3	4.2
21-30 Gm.....	34	4	5.1
31-40 Gm.....	3	2	5
41-50 Gm.....	5	1	4.9
	133	17	

either alone or in combination with sulfapyridine with eleven deaths. In most cases rabbit serum was used and was given in amounts varying from 100,000 units to 300,000 units. The most common reactions were urticaria, which occurred in six patients; asthma and cyanosis in 2; chills and fever in 2; and two went into collapse. Patients who received serum early in their

disease experienced a cessation of symptoms in about 24 hours. The course of the pneumonia seemed very little changed when it was given after the fourth day.

Sterile pleural effusion occurred in 5 patients all of whom recovered. Empyema occurred in nine with 2 deaths. Five of the patients with empyema had been treated with serum; of this group one died. Two had been treated with sulfapyridine, both recovering, and two had not received specific treatment, one dying. All but one was operated. Subsequent bacteremia occurred in one patient treated with serum and in one treated with sulfanilamide—both died.

THE number of cases that received sulfanilamide is too small to make any comparisons, and subsequent experience

Serious Antecedent Complications in Patients with Secondary Pneumonia

Antecedent Disease	Sulfanilamide alone or with serum		Sulfapyridine alone or with serum		No Specific Therapy		All Cases	
	Rec.	Died	Rec.	Died	Rec.	Died	No.	Died
Rheumatic Fever	1	..	..	..	..	..	1	..
Hysterectomy Fibroid	1	..	1	..	1	..	3	..
Cholecystectomy	3	..	..	2	5	2
Cholelithiasis
Chronic Appendicitis	1	..	..	1	..	..	2	1
Acute Appendicitis	2	1	7	1	2	..	13	2
Ruptured Appendix	2	1	..	..	3	1
Second Degree Burns	1	..	..	..	..	1	1
Anesthesia	1	1	..
Cerebral Concussion	1	..	1	..
Aplastic Anemia	1	1	1
Agranulocytosis	1	..	..	..	..	1	2	2
Cerebral Hemorrhage	3	..	7	10	10
Duodenal Ulcer	1	..	..	1	..	2	1
Gastro-enterostomy	1	1	1
Brain Tumor	1	1	1
Eclampsia	1	1	1
Herniorrhaphy	3	..	1	..	5	1
Myocardial Failure	3	3	3
Perforated Peptic Ulcer	1	..	..	3	2	1
Cancer of Bladder	1	1	..	..	1	1
Diabetic Gangrene Foot	1	1	1
Uremia	4	4	4
Tonsillitis	1	..	..	..	1	..
Auricular Flutter	1	..	1	..
Lung Abscess	2	2	2
Rheumatic Heart Disease	3	3	3
Cancer of Stomach	1	1	1
Phenol Poisoning	1	1	1
Suprapubic Cystotomy	1	1	..	..	2	1
Cancer of Breast	2	..	..	..	2	..
Pyelolithotomy	1	..	..	..	1	..
Intestinal Obstruct.	1	..	..	..	1	..
Gastrostomy Ca. Stomach	1	..	..	..	1	..
Gastrostomy Ca. Oesophagus	1	..	..	..	1	..
Acute Coronary Occlusion	4	4	4
Fracture of Vertebrae	1	..	..	..	1	..
Fracture of Femur	1	..	..	1	1
Fracture of Radius, Ulna, Ankle	1	1	1
Fracture of Tibia	1	1	1
Fracture of Ribs	2	..	..	..	2	..
Fracture of Humerus, Ankle	1	..	..	..	1	..
			29	9	..	..	91	49

has shown that it is not so good as sulfapyridine except in the streptococci infections.

The routine of treatment of the pneumonia cases on the ward has been

1. Complete history and physical
2. Examination of sputum when possible or throat culture
3. Complete blood count and urinalysis
4. Blood culture
5. X-ray of chest.

Toxic Effects of Sulfapyridine in 150 Patients

Vomiting	91
Moderately severe vomiting (doses omitted)	27
Severe vomiting (drug discontinued)....	11
Nausea without vomiting	12
Nitrogen Retention	5
Drug Fever	4
Drug Rash	3
Leukopenia	2
Hematuria	5

As soon as this work had been done and the diagnosis made, sulfapyridine was given to the adults, two grams immediately and 1 gram every 4 hours until the acute

symptoms of the disease had subsided, then in smaller doses for several days. Serum was given in addition after the type was determined if the acute symptoms had not subsided in twenty-four hours.

Daily blood counts, urinalysis, and blood sulfapyridine estimations were done, and any other laboratory tests that were indicated.

Dr. Long stated at the American College of Physicians meeting in Boston last month that if he had pneumonia, he would want to be treated with sulfapyridine until he began to vomit and then be changed to sulfadiazine. It is slowly absorbed and must be given intravenously for a quick effect. We have used sulfathiazole with the pneumonia cases this winter but the cases are not enough for comparison as yet. I can say that the patients have less marked toxic symptoms with it. Serum had little if any effect when given after the fifth day of pneumonia.

I wish to thank Miss Rosser for her cooperation in obtaining all of the pneumonia charts for the past three years.
66 HIGHLAND ROAD.

Associated Physicians of Long Island



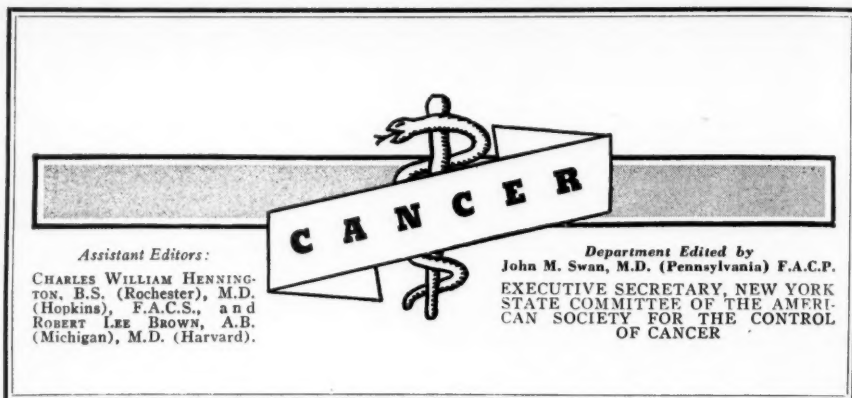
Fall Meeting, Thursday, September 25th, 1941

THE fall meeting and outing of the Associated Physicians of Long Island will be held on Thursday, September 25th, 1941. The Scientific Program will be held at the Pilgrim State Hospital in Brentwood, Long Island. This is the hospital of the "Four Eights," for it has a capacity of 8888 beds, and is worth seeing.

Dr. Harry J. Worthing, its Superintendent, is arranging for a tour of inspection of this large, well equipped, special hospital at 2:00 P.M. A diversified program is being planned to begin at 2:30

P.M. The first half will comprise two papers on Shock Therapy, as follows: No. 1. "Electric Shock Therapy with Clinical Demonstrations"; No. 2. "Insulin Shock Therapy with Analysis of Results." The second half will consist of "Timely Presentations in the Fields of General Surgery and Urology." As usual, these papers will be followed by general discussion. There will be a short business meeting immediately following the scientific session.

The South Bay Club, Brightwaters, will be the scene of the social activities in charge of Eddie Griffin which will include golf, tennis, and the cocktail hour with special entertainment. This will be followed at 6:30 P.M. with another fine steak dinner—cost per plate, \$3.50. After dinner the American Airlines will give us a feature program. Those who attended the last dinner need be told no more; those who were not there ought to come to find out what Eddie can do. Put down the date—Thursday, September 25th.



CANCER OF THE BREAST

II—Method of Development

IN A paper entitled: "On the Origin of Cancer," Cramer (10b) said: "Cancer does not appear as a bolt from the blue in a healthy tissue; but as a result of prolonged action of a carcinogenic agent, the tissue or organ on which it acts undergoes pathological changes before cancer develops."

The pathological changes in the tissues of the breast that precede the development of cancer are (1) benign tumors and (2) chronic mastitis.

Benign Tumors:

IN 1934 Eberts (12), writing of the evolution of cancer from benign cystic and papillomatous lesions of the breast, reported a study in which different parts of the same breast showed simple cysts with desquamative hyperplasia of the lining epithelium; cysts with advanced hyperplasia, the lining epithelium being several layers in thickness; cysts in which the lining exhibited partial or complete replacement of the lining epithelium with cancer cells; cysts in which there was a break in the basement membrane and infiltration of the surrounding tissues with cancer cells; ducts filled with cancer cells; lymphatic

permeation; and lymphnode involvement.

Tod and Dawson (27) believe that carcinoma of the breast is the end stage of a process that begins as epithelial proliferation within the glandular structures. Many cellular ("encephaloid") carcinomata begin as papillomata.

Hogenauer (19) says that solid benign tumors scarcely ever lead to cancer; that cystic growths, fibroses and true cysts do not lead to cancer any more frequently than other lesions, with the exception of cystadenoma.

Dawson (11) is of the opinion that the benign and malignant breast tumors which become apparent during pregnancy and lactation are preexisting growths and are not the result of changes in the breast accompanying these essentially physiological processes.

Hicken, Best and Tollman (18), in discussing the significance of hemorrhage from the nipple, are of the opinion that this symptom should be considered as a warning of profound pathological change. It may indicate carcinoma, papilloma, Paget's disease, cysts, infections, traumatic degeneration, or vicarious menstruation. When hemorrhage from the nipple occurs

and no tumor can be palpated, the hemorrhage is most likely due to the presence of a duct papilloma. Papilloma is a benign tumor; but it may undergo carcinomatous change.

Cholnoky (8) says that both carcinomatous and sarcomatous change may occur in a fibro-adenoma.

Saphir and Parker (24) have studied fifty-eight cases of breast papilloma. These growths they divide into a fibrous type, a glandular type, and a transitional cell type. They consider all of these tumors to be benign. They are of the opinion that the transitional cell type of tumor may recur after removal and that some of the recurrent growths may be malignant. On the other hand, they are of the opinion that "there is no danger that carcinoma may develop" in the fibrous type and the glandular type tumors.

Mastitis:

IN 1932 Cohn (9), after a study of forty-three cases of chronic lactation mastitis, points out the difficulty of distinguishing it from cancer by clinical methods. He says that mastitis sometimes masquerades as cancer and that cancer may masquerade as mastitis.

In 1935 Cheattle (7) described the development of cancer of the breast from its origin in chronic cystic mastitis (Schimmelbusch's disease). Schimmelbusch's disease begins in a desquamative epithelial hyperplasia, sometimes in the ducts only, sometimes in both the ducts and acini. The affected ducts are dilated by the presence of colostrum-like cells in a fluid medium. This stage ends in the formation of cysts of the ducts and the acini. It usually begins in the late twenties and early thirties and may last an indefinite time or pass into the second stage at once. The second stage is characterized by the development of multiple epithelial neoplastic growths within the cysts. These growths are entirely contained within the boundaries of the dilated ducts or acini and may or may not be papillomatous in character. These tumors may remain within their normal boundaries for an indefinite time, during which they con-

tinue to grow in size and to increase in number. If the process continues carcinoma becomes the final step.

In the same year Limburg (20) discussed the relation of epithelial proliferation in adenofibrosis and adenofibroma to precancerous lesions and the relation of cystic disease to the later development of cancer.

AND Rodman (23) expressed the opinion that chronic cystic mastitis (abnormal involution, mastopathy, chronic desquamative hyperplasia, etc.) is associated with cancer in from 15.0 to 20.0 per cent of cases. In his series of cases, 15.5 per cent.

Atkins (3) suggests that the fibrosis which accompanies chronic mastitis is a part of the defense mechanism against the development of cancer.

Handley (14) considers chronic mastitis to be a precancerous disease.

On the other hand, Trout (28) says that there is no definite evidence that chronic cystic mastitis is a forerunner of cancer.

Taylor and Waltman (26) describe two major forms of pathological change in breast material that had been diagnosed as "chronic cystic mastitis" namely: adenofibrosis and hyperplasia of the ducts. They reviewed the histology of 103 such tissues. They were classified as (1) adenofibrosis: the distortion of the normal gland structure by the increase in the amount of fibrous tissue or of normally formed acini. (2) Adenosis: proliferation of atypical acini. (3) Inflammatory disease of the ducts. (4) Neoplastic disease of the ducts. Clinically these cases are characterized by diffuse nodularity and premenstrual pain or by discharge from the nipple. Sometimes there is a single tumor arising in the larger ducts or the isolated nodules of Schimmelbusch's disease.

Hinchey (16) considers papillomata and chronic cystic mastitis to be precancerous lesions. In his paper entitled "Nipple Discharge," he analyzed sixty-seven cases seen at the Massachusetts General Hospital (Boston) and the Boston Dispensary between 1925 and 1939. He says: "The chief problem in this study is the discharging breast in which no mass is palpable. Such

a breast must be suspected of harboring not only the precancerous conditions but even an actual cancer."

In 1939 Goodman (13) under the title "Fibrocystic Disease of the Breast" suggested that the term be used to cover a group of pathological changes variously known as abnormal involution of the breast, cystic disease of the breast, Reclus' disease, serocystic tumor of the breast, chronic cystic mastitis, cystadenoma, Schimmelbusch's disease, senile parenchymatous hypoplasia, mazoplasia, cystophorous desquamative hyperplasia, cystic disease of the breast, mastopathy, adenofibrosis and fibroadenomatosis. The clinical and microscopic pictures are varied and the author terms the changes "non static." (We presume he means that the changes in the breast tissue are not fixed; but undergo a definite cycle of development.) He suggests that these changes are at first essentially functional and, as a result of repeated and perhaps aberrant stimulation by the luteal hormone, progesterin, and the associated hormones, estrogen and prolactin, produce definite histological changes.

Hormone Influence:

THIS contribution leads directly to a discussion of the relation of hormone influence on the development of cancer. We have formed the opinion that many workers in the field of breast surgery believe that the ovarian hormones, or one of them, or an imbalance between the ovarian hormones and the pituitary hormones, are the direct cause of breast cancer.

In 1937 Cramer (10a), in discussing the relation of the estrogenic hormones to cancer of the breast, concluded that the inference is that cancer of the breast, in those women in whom the family history reveals other cases of breast cancer, is the result of an internal carcinogenic environment. "Since in mice this internal carcinogenic environment is associated with abnormalities in the endocrine system, a search for such abnormalities in women with breast cancer and a family history of breast cancer is indicated."

Allaben and Owen (1) report the case of a single woman, aged 50 years, who

discovered a slightly painful and tender mass in the right breast three weeks before she was first seen. In 1936 the patient had complained of weakness and fatigue on exertion. She was given 2000 units of estrogen intramuscularly twice a week for twenty-six weeks. At the end of that period, after consulting another physician, she received one injection of 10,000 units of estrogen followed by 2000 units three times a week for six months. In all, the patient received 258,000 units of estrogen. During this treatment the patient noticed occasional fullness of the breasts; but had no menstruation. In 1937, after she had voluntarily stopped taking the injections of estrogen, she had a copious menstrual flow which lasted one week. On examination, a movable tumor was found in the upper, outer quadrant of the right breast. There were no discoverable metastases. A radical mastectomy was done and the histological report showed the growth to be adenocarcinoma. There were several small extensions of the primary growth into the surrounding breast tissue. "We feel that the continued use of estrogen in this instance produced an hypertrophy of the breasts with some physiological activity, indicated by their occasional fullness. The secretion was retained, decomposed and acted as a carcinogenic agent."

This experience should be a warning against the indiscriminate use of endocrine hormones. Estrogen is an highly active substance. It is possible to do harm by its continued administration.

TAYLOR and Waltman (26) reviewed the clinical evidence of ovarian dysfunction in women with "chronic mastitis." Of forty-seven women with painful nodular breasts only seventeen had borne children (36.17 per cent) while of forty-six with discharge from the nipple, forty-one had had children (89.13 per cent). All of the patients with a milky discharge had been pregnant. Disturbances of menstruation, while complained of by a "minority of patients with chronic mastitis," are more frequent than in normal women. A decrease in the amount and duration of the menstrual flow in cases of painful and

nodular breast is often associated with chronic mastitis.

They also studied the gross and the microscopic structure of the mammary glands in a strain of mice highly susceptible to cancer (25 animals) and in an insusceptible strain (15 animals). They then compared the changes which occurred spontaneously with those found in women. As early as the third month the animals of the high tumor strain showed a considerable increase in the number of acini compared with the number of acini in the low tumor strain. However, the development of new fibrous tissue, the periductal inflammation and the intraductal epithelial proliferation did not occur spontaneously.

This fact would suggest that the ovaries of the susceptible mice produced more estrogenic hormone than those of the insusceptible strain and that the increased amount of estrogenic hormone is a specific factor in the etiology of the tumor. However, it has been shown that when the same amount of estrogenic hormone is administered from external sources to male mice, cancer will develop in the mammary glands of some strains but not in those of other strains. Therefore, it appears probable that the specific hereditary factor is not to be discovered either in a primary anatomical peculiarity of the mamma nor in simple hyperfunction of the ovary.

A study of the endocrine system of these two strains of mice (ovaries, uterus, adrenals, thyroid and pituitary) showed that in the cancer susceptible strain, the ovaries were larger and contained more corpora lutea than those of the cancer resistant strain.

A STUDY of the results of the injection of various estrogenic substances into the mammary gland tissue of these two strains of mice, using estrone (theelin or amniotin), estradiol benzoate (oestroform B), gonadotropic substance from the urine of pregnant women (follutein, Squibb) and the lactogenic principle of the anterior pituitary body (prolactin) led to the conclusion that a diffuse proliferation of acini was the characteristic spontaneous lesion produced and was the same lesion seen as

a spontaneous development in animals of a susceptible strain. The diffuse fibrosis or adenofibrosis which is characteristic of the commonest form of benign mammary disease in women has no morphologic counterpart in the lesions of the mammary glands of mice, whether spontaneous or induced by the injection of endocrine products.

"The human disease characterized by retained secretion in dilated ducts, moderate hyperplasia of the lining of the ducts and signs of periductal inflammation is rather closely imitated by lesions in mice developing after prolonged administration of endocrine substances, especially of estradiol."

"Complex neoplastic lesions of the lining of the ducts seen in the human breast, such as papillomata or proliferation of the epithelium to fill the ducts completely, do not develop in the breast of the mouse, either spontaneously or after the prolonged administration of estrogens."

Suntzeff, Babcock and Loeb (25) say that so far as epithelial tissues are concerned, ovarian hormones induce a cancerous transformation only in the secondary sex organs in which they cause rhythmic growth during the sexual cycle and during pregnancy.

In June, 1940, Heiman (17a) reported the results of the influence of hormones on the growth of transplanted fibro-adenomata in castrated rats. He found that in castrated females the percentage of takes of transplanted mammary fibro-adenomata increased from 16.0 to 57.0 per cent following the injection of gonadotropic hormones (antuitrins). The transplanted tumors became cellular fibromata or sarcomata.

In normal females, on the other hand, the percentage of takes diminished from 66.0 to 56.0 per cent following the injection of gonadotropic hormones.

In castrated males the percentage of takes increased from 54.0 per cent to 65.0 per cent following the injection of gonadotropic hormones and the transplanted tumors remained fibro-adenomata in 33.0 per cent of the animals.

IN normal males, on the other hand, the percentage of takes increased from 33.0 per cent to 56.0 per cent, following the injection of gonadotropic hormones.

Injection of somatotrophic hormones (antuitrin G) did not influence the number of takes, the rate of tumor growth or the morphology of the tumors in either male or female castrates. On the other hand, the addition of female sex hormones (theelin, progynon B) more than doubled the growth incidence (24.2 per cent to 59.3 per cent).

In castrates there was no change in tumor morphology. The rate of growth or the number of takes was not influenced by the injection of small doses of estrogenic hormones. However, large doses of these hormones in tumor bearing animals hastened the production of liposarcomata.

The combined injection of estrogenic and gonadotropic hormones increased the growth incidence in female castrates from 16.0 per cent to 60.0 per cent and in male castrates from 54.0 per cent to 100.0 per cent.

The difficulty in evaluating these findings is complicated by the fact that many implanted fibro-adenomata become cellular fibromata in normal animals after a prolonged sojourn in the host. Nor, with the doses used, can the hormone influence be definitely determined when a series of rats produce fibromata from implanted fibro-adenomata.

IN the same month Heiman (17b) published a second paper on the influence of androgenic hormones on transplanted mammary tumors in white rats, from which he drew the following conclusions: 1. The percentage of takes of transplanted mammary fibro-adenomata in all rats injected with the male sex hormone (testosterone propionate) was reduced from 42.2 per cent in normal animals to 13.5 per cent. 2. The alteration of transplanted fibro-adenomata to fibromata and sarcomata increased to 38.5 per cent and 45.7 per cent, respectively, in injected animals compared with 26.0 per cent and 14.0 per cent in normal animals. 3. In females the injection

of the hormone inhibited the growth of the glandular component of the transplanted tumors, except during pregnancy. 4. When the injections were discontinued small periductal fibrotic tumors appeared after a latent period of six months.

The dosage of the male sex hormone necessary to inhibit the growth of transplanted fibro-adenomata is greater in young than in old rats.

In October, 1940, Leo Loeb (21) published an important paper on The Significance of Hormones in the Origin of Cancer. He enumerated the following established facts: (1) The incidence of spontaneous mammary cancer in mice . . . varies greatly in different strains. (2) The hereditary cancer rates in successive generations remain constant. (3) The cancer rate in breeding mice is higher than in nonbreeding mice in almost all strains, but the degree of this difference differs in the various strains. He then goes on to say: "The so-called spontaneous mammary gland carcinoma is a cancer produced by the estrogen given off rhythmically in mice hereditarily predisposed to the disease.

"The effect of hormones on the development of tumors can be demonstrated, not only by diminishing the amount of hormones, but also by increasing it over that given off by the ovaries under usual conditions."

Leo Loeb and M. M. Kirtz (*Amer. Jour. Cancer*, 1939, 36:56) found that carcinoma of the mammary gland could be produced in mice, in which it otherwise would not have appeared, by transplanting the anterior lobes of the pituitary body under conditions which made possible the long continued, and probably permanent, survival of the transplants. But these transplants were effective only if the ovaries were present in the hosts. There was no definite effect in males or in ovariectomized females.

CONCERNING the manner in which hormones bring about the development of cancer, several significant facts have been established: 1. A sudden change from the resting gland or from the gland undergoing the ordinary cyclic growth processes

into carcinoma under the influence of an estrogenic substance does not occur. Instead there is a gradually increasing stimulation, a slowly active growth and secretion process pushing along to proliferation, step by step, until the developmental process results in abnormal growth.

"The estrogenic hormones thus produce cancer of the mammary gland by stimulating the gland tissue to greater and greater proliferation, until finally the threshold of normal growth processes has been exceeded and the gland then passes into the phase of carcinomatous growth."

The action of hormones in the etiology of mammary gland carcinoma is effective only in combination with an hereditary factor. This factor differs greatly in different strains of mice and is transmitted from generation to generation. Whatever the nature of the hereditary factor may be, there can be no doubt that it varies greatly in different animal strains.

The estrogenic hormones are effective because they induce growth processes in receptive organs and because estrogen does not induce a refractory state to such a marked degree as hormones that are protein in nature.

Foster Nursing

IN relation to the influence of retained and decomposed secretions on the development of cancer Bittner (5a) found that mammary gland tumors developed as often in mice that had nursed their young as they did in animals that had milk stagnation because the young were not allowed to nurse.

He said that there is some evidence that mothers' milk in mice is operative in determining the incidence of breast tumors. Fewer tumors developed in the young mice belonging to a high-tumor stock if they were nursed by a foster mother of a low-tumor stock.

Later (5b) he reported the results of some experiments in which mice, the result of brother-sister mating, were removed from their mothers and nursed by foster mothers, which seem to indicate that there is a "breast cancer producing influence," which is responsible for the cancerous

transformation of normal breast tissue. He thinks that this cancer producing influence is transmitted to the young through the mother's milk.

During the year following this contribution Bittner (5c) published a third paper in which he said that the development of breast carcinoma in high cancer strains of mice is probably due to three factors: (a) a "breast cancer producing influence" transmitted in the milk of breast cancer stock mothers; (b) an inherited breast cancer susceptibility of one or more dominant factors; (c) an hormonal stimulation influence.

The breast tumor incidence of a high tumor stock may be reduced by fostering one generation of young to low-tumor stock females. No significant increase in the breast tumor ratio was observed from fostering low-cancer stock young to high-cancer females.

The incidence of breast tumors in first generation hybrid mice which inherit the breast cancer susceptibility and have hormonal stimulation may be increased or decreased as the result of nursing.

Breast tumors which are not transmitted may result from other causes.

LATER in 1940 a fourth (5d) paper by the same author reported further studies of these matters. He is of the opinion that if a high-breast-tumor-stock female is mated to a low-breast-tumor-stock male the resulting female hybrid mice will show a breast cancer incidence similar to that observed in the high-breast-tumor-stock mother. On the other hand, if a low-breast-tumor-stock female is mated to a high-breast-tumor-stock male, the resulting female hybrids will show a breast cancer incidence similar to that observed in the low-breast-tumor-stock mother. In other words, the breast cancer incidence in hybrid animals is governed by the frequency status of the female parent.

Bittner concludes that the breast-tumor incidence normally obtained in females of high-tumor strains of mice may be reduced as the result of foster nursing of the young of such animals by low-tumor stock females.

The maternal (extrachromosomal) influence of breast-cancer development in mice is transferred in the milk to the progeny while nursing. Females of low-tumor-stocks nursed by high-tumor-strain mothers do not give a high-tumor incidence. They may, however, transfer the milk influence to the young which they nurse and breast tumors may result in animals having all active etiological influences. An influence similar to the milk influence may be present and active in other tissues and organs of cancerous-strain mice as indicated by data obtained from transplantation studies.

Breast cancer in mice which is transmitted from generation to generation probably has a genetic basis as expressed by the inherited cancer susceptibility.

Three influences active in the etiology of inherited breast cancer in mice are (1) the milk influence; (2) inherited susceptibility, and (3) ovarian hormonal stimulation of the mammary gland.

BAGG and Hagopian (4) have carried on an experiment to determine the relation of functional activity of the breast to the development of carcinoma. They selected fifty-six female rats which were allowed to begin to breed at an early age, to have consecutive litters in rapid order, but were not allowed to nurse their young. Another group of thirty-seven animals was allowed to mate and to nurse their young. In the former group, which they called their "test group," two spontaneous adenocarcinomata, one papillary adenocarcinoma, and one alveolar acinar carcinoma occurred. There were also eight fibro-adenomata, six adenomata, and four leiomyomata of the mammary glands in these animals.

In the latter group no carcinomata and only one fibro-adenoma had developed at the time of the publication of the paper. From these results they conclude that rapid breeding and the prevention of nursing are factors associated with the development of mammary gland tumors.

Andervont (2) undertook a study in which mice from a low-tumor strain were foster nursed by females of a high-tumor strain and mice from a high-tumor strain were foster nursed by females of a low-

tumor strain. In the former experiment foster nursing increased the incidence of tumors from 0 to approximately 15.0 per cent, and in one instance to 64.0 per cent. In the latter experiment the incidence of tumors was reduced from 100.0 per cent to approximately 50.0 per cent.

Bonser (6) undertook an experiment to determine whether out-bred strains of mice differed materially from inbred strains in their tendency to develop other mammary cancers after surgical removal of a primary cancer of the breast. She bought twenty-eight hybrid mice, each of which had had one or more adenocarcinomata, the diagnosis having been confirmed histologically. Twenty-four tumor bearing mice from inbred, susceptible strains were used for comparison.

After surgical removal of the primary tumors, local recurrence was approximately as frequent in the outbred as in the inbred strains (25.0 per cent in the latter, 28.6 per cent in the former). On the other hand, second tumors (another breast cancer) at a site removed from the primary site occurred in 66.7 per cent of the inbred animals against 35.7 per cent in the outbred animals.

She concludes that the difference between the two strains is a quantitative and not a qualitative one; that the high degree of susceptibility of inbred strains is merely an exaggeration of the disease as it appears in outbred animals.



TROUT (28) is of the opinion that there is some very definite association between dysfunction of lactation and the subsequent development of carcinoma of the breast. He pointed out that the upper, outer quadrant of the breast is the most frequent site of carcinoma and that it is also the site of greatest traumatic insult by pendulous breasts constantly making traction while the patient is walking. "Chronic irritation produced by this method might play an important role in the development of malignancy in this locality."

Some Miscellaneous Items:

HARRINGTON and Miller (15) point out the fact that there are cases in which a breast tumor is the first indication of a systemic neoplastic disease, such as chloroma, lymphatic leukemia, lymphogranuloma of the Hodgkin's type and lymphosarcoma.

While we believe that no serious student of the cancer problem believes that a single injury is the cause of breast cancer, the question bobs up from time to time. So far as we know no paper on the subject has been published since Rixford's (22) in 1935. He gives the following criteria as necessary for proof of cause and effect: (1) There should be a definite injury of considerable severity. (2) A tumor which is, histologically, a known form of breast tumor, should be shown to exist at the site of the injury. (3) The tumor should be discovered within three weeks of the trauma and should not be larger than is likely to have grown in the interval. (4) There should be positive knowledge that no tumor was present at the site of the injury before the injury occurred.

Summary

THE weight of evidence seems to confirm the theory that cancer of the breast may develop both in a benign tumor and in an area of chronic cystic mastitis. Eberts, Tod and Dawson, Hicken, Best and Tollman, Cholnoky, and Hinchey are of the opinion that benign tumors may become malignant. Hogenauer, and Saphir and Parker believe they do not become malignant: the former with the exception of cystadenoma, the latter with the exception of the transitional cell type of papilloma. Cohn, Cheate, Limburg, Atkins, Handley, Taylor and Waltman, and Hinchey are of the opinion that mastitis may precede the development of cancer. Trout, on the other hand, believes that cancer does not develop in areas of mastitis.

It appears that the development of cancer of the breast depends upon these factors: (1) An inherited susceptibility; (2) the action of the estrogenic and pituitary hormones; (3) the decomposition of retained secretions.

Perhaps the train of events is as follows: The action of the estrogenic hormones results in breast hypertrophy; the pituitary hormones stimulate secretion which, being retained and decomposed, furnishes the carcinogenic agent resulting in cancerous change in the susceptible individual.

According to Bittner, a "breast cancer producing influence" may be transferred to the offspring in the mother's milk.

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CONTEMPORARY PROGRESS

Difficulties in Differentiating Mid-brain Lesions From Cerebellar Lesions

H. O. PETERSON
and A. B. BAKER

(*American Journal of Roentgenology*, 46:37, July 1941) report illustrative cases showing the difficulty in differentiating lesions of the midbrain from those of the cerebellum in certain instances, even with ventriculography. Cerebellar tumors, "situated inferiorly," may cause an obstruction of the caudal portion of the fourth ventricle, but the dilatation of the aqueduct and the anterior part of the fourth ventricle may be clearly demonstrated on the ventriculogram, indicating the correct localization of the tumor. A tumor of the fourth ventricle causing a gradual dilatation of the ventricle may be clearly visualized by the injected gas that enters the ventricle surrounding the tumor. Tumors of the pineal gland usually show a typical clinical and roentgenological picture; they obstruct the aqueduct and often show a mass protruding into the third ventricle. However, in other lesions in the same region the aqueduct and fourth ventricle may not be clearly visualized, and in such cases it is impossible to localize the lesion or to state "with certainty" whether the obstructing process is in the midbrain or the cerebellum. In six of the illustrative



cases reported, the ventriculograms were similar and the aqueduct failed to fill with gas, yet in 3 of these cases a cerebellar tumor was found

at operation or autopsy, and in the other 3 cases the lesion was in the region of the aqueduct. In another case the ventriculogram showed the typical picture of aqueduct obstruction, yet no obstructing lesion was found at autopsy. The authors suggest that in some cases when the aqueduct and fourth ventricle fail to fill in the ventriculogram, better results may be obtained by manipulation of the head "in some manner such as Lysholm describes." In other cases the use of "denser contrast media" such as lipiodol may be necessary.

COMMENT

This paper illustrates the diagnostic difficulties encountered in neurologic practice. The problems arising in the differentiation of pontile tumors from tumors of the pineal body and also the acoustic nerve were stressed by Horrax^(1, 2) and Alpers⁽³⁾.

It is the feeling of the reviewer that if in the opinion of the examiner a neoplasm exists where the physical signs are confusing and "air studies" are perplexing an exploratory suboccipital craniotomy should be performed.

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Encephalitis, Encephalomyelitis and Myelitis

N. GOTTEN and G. J. LEVY (*South-ern Medical Journal*, 34:655, June 1941) report 51 cases that they have classified as encephalitis and encephalomyelitis. Of these 21 were considered to be encephalitis lethargica of the von Economo type; although presenting widely varying symptoms, they showed the characteristics of "a primary cerebral infection associated with a pleocytosis, mainly of lymphocytes;" 5 of these 21 patients died. Five other cases were clinically somewhat different, recovery being rapid in all; the spinal fluid cell count showed 100 per cent lymphocytes; these were classified as encephalitis of the St. Louis type. There were 8 other cases of encephalitis following infection of the respiratory tract. There were 6 cases of encephalitis and encephalomyelitis following measles; one of these patients died, and one showed very severe symptoms and was ill more than five weeks. There were 4 cases of encephalomyelitis following mumps, with recovery in all within eleven days; and one case of postvaccinal encephalitis. In 3 cases cerebral symptoms, chiefly convulsions, compli-

cated pertussis; in one of these the cell count indicated a definite encephalitis; in the other 2 cases the cerebral damage may have been due to the prolonged coughing. In 3 cases myelitis with paralysis of the lower extremities was associated with or followed an acute infection; one of these patients died; in the 2 who recovered residual weakness and spasticity persisted. Although the causes of these cases of encephalitis and encephalomyelitis are varied,

other investigators have found that all cases of this type show a somewhat similar pathology—lesions predominating in the white matter and tending to be perivascular.

COMMENT

It has often been emphasized that a careful history is extremely important in a satisfactory analysis of a disease affecting the central nervous system, often evaluated as 80 per cent. In no situation is it more important than in the acute demyelinating infections, as in many conditions the resultant clinical picture is quite similar. However, the prognosis is better in some instances than others, chickenpox versus measles as an

example. While stressing a carefully elicited history, an equally careful general and neurophysical examination may provide the leading clues where the story is not helpful. H.R.M.

The Peripheral Nerves in Cases of Nutritional Deficiency

C. D. ARING and his associates at the University of Cincinnati College of Medicine (*Archives of Neurology*, 45:772, May 1941) report a biopsy study of a peripheral nerve in 10 persons with pellagra and in 5 control subjects (one of whom was addicted to alcohol). The ter-

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minimal portion of the internal branch of the anterior tibial nerve was removed for biopsy study in each case, under procaine anesthesia, without causing pain or disability. The specimens were placed in osmic acid which stains the myelin sheaths black, and the myelin sheaths counted. The nerve bundle counted was also photographed and a corrected count made in the photomicrographs after enlargement. The count was made by the planimetric method. In the normal subjects, with the exception of the patient addicted to alcohol, the nerve bundles contained from 6,500 to 9,000 myelin sheaths. The subject addicted to alcohol showed no clinical signs of neuritis but a comparatively low myelin sheath count (5,073). In 8 of the 10 persons with pellagra, the myelin sheath count was definitely below normal. The axis-cylinders were also "involved in the process, usually in the same severity as the myelin sheaths." A pellagrin who was addicted to alcohol showed "extreme" myelin sheath loss. In the patients showing the more marked degrees of myelin sheath loss, there were a number of myelin sheaths larger than normal and showing signs of degeneration. In comparing these findings with the clinical findings, no exact correlation was found. In all but one of the 4 patients with myelin sheath counts below 4000, the tendon reflexes were affected, and in 2 of these were hyperactive. While normal tendon reflexes were found in one patient with a relatively low myelin sheath count, these reflexes were never affected when the myelin sheath count was normal. Spontaneous pain in the legs and tenderness of the muscles of the feet and legs to deep pressure were present in all the patients with pellagra, yet 2 of these patients showed normal myelin sheath counts. All of the 10 pellagrins also showed reduction in sensation of "one kind or another," especially in the feet and legs. It is evident that "no single clinical sign can be correlated with the number of myelin sheaths remaining in the nerve." However, in such biopsy studies as were carried out in these cases only "a small bit" of peripheral nerve was examined; this may not give "a representative picture of the whole nerve." The ac-

curate diagnosis of minimal neuritis, therefore, is difficult; probably a change in the tendon reflexes is "the most reliable single sign" of peripheral neuritis.

COMMENT

Fortunately the diagnosis of peripheral neuritis is not dependent on biopsy examinations, as it is ordinarily fairly easy to catalogue. However, studies such as these are valuable as they do indicate the deviations from the normal which may occur. H.R.M.

Electroencephalographic Classification of the Epilepsies

H. JASPER and J. KERSHMAN (*Archives of Neurology*, 45:903, June 1941) report 929 electroencephalographic examinations of 494 patients with symptoms recognized clinically as epilepsy. Definite abnormalities of a paroxysmal character were observed in the tracings of 468 (95 per cent) of these patients. By analysis of 936 records, which were mostly made in the periods between epileptic seizures, the characteristic findings were classified as follows: Sudden "outbursts" of high voltage waves, called paroxysmal hypersynchrony, were the most characteristic feature of electroencephalograms from epileptic patients. Localization was important in the classification of the records; this was of three types: (1) localized unilateral cortical; (2) bilaterally synchronous from homologous areas; (3) diffuse. Wave forms and patterns were important for the analysis of each case; there were three random wave forms—"spikes," "sharp waves" and "delta waves." There were six types of paroxysmal rhythm, characterized as 3 per second waves and spikes, 3 per second waves, 6 per second waves, 10 per second waves and 25 per second waves. In about one-half the cases studied, the abnormality was localized to "a discrete area" in one hemisphere. The random spike in such an area was found to be the best indication of a superficial local cortical epileptic discharge; this "pattern" occurred most frequently in patients with seizures of focal cortical onset and "gradual march," the symptoms at onset depending upon the

focal area involved. Bilateral synchronous abnormality was observed in 35 per cent of cases, usually bifrontal or bitemporal. With bifrontal abnormalities showing 3 per second wave and spike rhythm and the 3 per second waves, the clinical symptoms were minor attacks of the petit mal type and major attacks that became generalized, with initial loss of consciousness. With bitemporal abnormalities, many patients had visceral auras and disturbances of thinking or behavior (automatisms, etc.). Diffuse abnormalities were found in about 15 per cent of the cases; patients showing diffuse multiple spikes and multiple sharp waves usually had major generalized seizures, "with no consistent focal cortical onset." The clinical characteristics of the epileptic seizures in the patients studied, therefore, showed a close relationship to the form of the electroencephalogram in each case, "independent of the nature of the etiologic factor."

The Use of Vitamin B₁ in the Treatment of Neuritis and Neuralgia

L. KALAJA (*Acta medica Scandinavica*, 108:427, May 14, 1941) reports the use of vitamin B₁ in the treatment of various types of neuritis and neuralgia. The vitamin was given in doses of 50 mg. daily by intramuscular or intravenous injection. From four to sixteen treatments were given. In all those cases in which the treatment was successful, pain was rapidly relieved; the sensory disturbances and the reflexes improved more slowly; in the most severe cases it was four weeks or more before cure was complete. The series treated included 38 cases of polyneuritis, of which 27 were cured. The cases in which the vitamin therapy resulted in cure included: 5 cases of polyneuritis complicating an acute infection; 5 cases of polyneuritis complicating diabetes; 3 cases associated with hyperemesis; 3 cases of alcoholic polyneuritis; and 11 out of 12 cases of polyneuritis without definite cause. The treatment was without effect in 5 cases of neuritis following herpes zoster; in 2 cases of tabes dorsalis with lancinating pains; and in 3 cases of neuritis complicating pernicious anemia. In 11 cases in

which the neuritis was due to a local cause, 3 were cured. In 9 cases of neuralgia, including 2 cases of trigeminal neuralgia, the vitamin B₁ therapy was not effective. With few exceptions, the patients whose neuritis was relieved by the treatment showed definite evidence of vitamin B₁ deficiency, due either to faulty diet or to diminished absorption owing to gastrointestinal disturbances. It is the author's opinion that vitamin B₁ therapy is indicated only in those cases in which there is a deficiency of this vitamin.

COMMENT

The report of this foreign observer coincides with the observations in this country concerning the value of vitamin B₁ in the treatment of neuritic and neuralgic conditions. Certainly the experience of the reviewer jibes with that of Kalaja. In our hands it was utterly valueless in treating the so-called neuralgias, particularly trifacial neuralgia. There is no doubt that those instances in which there is a likely vitamin deficiency such as is met with in diabetes and alcoholic polyneuritis (it is interesting to note the small number caused by alcohol, compared to the occurrence in this country) respond miraculously to intensive B₁ therapy. Also there is no indication for using vitamin therapy in the intractable pain of herpes zoster or the lancinating pain of tabes. For the former surgery may provide the only relief, while in the latter we prefer induced fever therapy. In the neuritis occurring in pernicious anemia the use of liver with vitamin B₁ is indicated, and should be administered despite the blood picture. We agree with the author's final conclusion. H.R.M.



Physiologic Basis of Heat

C. O. MOLANDER (*Archives of Physical Therapy*, 22:335, July 1941) discusses the use of local applications of heat in the treatment of abdominal pain due to such conditions as cholecystitis and spastic

colitis; and for the treatment of traumatic edema of the feet and legs and of heat allergy. While heat applied to the abdomen by means of hot water bottles, hot wet packs, electric pads, infrared rays or diathermy, is clinically effective in relieving pain, there is some difference of opinion as to the mechanism by which heat acts in such cases. On the basis of the investigations reported by others and his own studies, the author concludes that there are definite reflex relations between cutaneous areas and the gastro-intestinal tract. As a rule internal organs are "reflexly related" to the skin directly overlying them, and as a rule the effect produced by reflex is the same as that in the cutaneous area; thus the application of heat to the cutaneous area produces relaxation, vasodilatation and increased blood supply. Pain due to ischemia is relieved by the application of heat to the overlying skin, by the resulting vasodilatation. For the use of heat in the treatment of traumatic edema of the feet and legs, it is important to determine that there is no obstruction to the veins and lymphatics; the heat in these cases should be of mild degree and the foot and leg should be "properly elevated." A few patients show a definite heat allergy—exposure to an infrared generator causing intensive wheal formation and faintness; in some cases urticaria develops only at the site of local application. Such cases of heat allergy may be successfully treated by "desensitization," with very brief periods of heat application followed by cold applications. Alternating applications of heat and cold can be repeated at frequent intervals for half an hour daily, and for a longer period of time as tolerance is gained. In this way a high degree of tolerance for heat can often be established in two weeks to two months.

COMMENT

The reflex reaction to the application of superficial heat is generally overlooked and this author gives it due emphasis. Although visible light does penetrate deeply beneath the skin, it can not penetrate into the abdominal cavity and be considered responsible for relief that is obtained in dysmenorrhea and gallbladder pain. The reflex action must be considered the way in which the relief is ob-

tained. Heat allergy is of interest because it is so rare. In an experience of well over twenty years in physical therapy, this commentator has never seen a case of heat allergy. It is possible, but remotely so. N.E.T.

The Early Use of Physical Therapy in the Treatment of Injury

C. R. MURRAY (*New York State Journal of Medicine*, 41:1052, May 15, 1941) states that during the stage of inflammation and repair in injured tissues, any treatment that will increase the rate of flow in the minute capillaries and lymphatics will "eliminate hemorrhage, exudate, fibrin, and edema with a rapidity and in an amount roughly proportionate to the degree of efficiency of the minute circulation attained." In his experience, he has found that elevation of the part, gentle stroking, "sedative massage," low-degree heat for prolonged periods, "guided and resisted" active exercises that can be carried out without pain, and electrical stimulation of muscles producing rhythmic, slow, alternating contraction and relaxation without spasm or pain, will produce the desired effect on the "minute circulation." On the other hand heavy massage, active exercises or electrical stimulation of muscle causing pain or spasm, and intense heat for short periods are contraindicated in the early stage of repair after trauma as aggravating the conditions which they are supposed to relieve. Of the various methods that may be used to apply heat, if diathermy is employed, low milliamperages for prolonged periods are beneficial. If lamps are used, those giving an intense heat are not of value; the use of two or three ordinary light bulbs inside a blanket tent for "a period of hours" is, however, of definite benefit. He has found that these methods are of value in the early treatment of fracture as well as other types of injury, provided that the fracture is of such a type that it can be treated by methods that allow ready access to the part, although these methods may be less simple and less easily applied than those which do not allow such access. By the early use of the methods of physical therapy outlined, the author has found that not only is the period

of convalescence definitely shortened, but the residual disability which would necessitate later treatment is also materially decreased.

COMMENT

This article should be read by every fracture surgeon. The author presents the view of the fracture surgeon and not that of the specialist in physical therapy. His observations of the usefulness of these treatments on fractures put a stamp of approval on what physical therapy has tried to bring out for years. It is important to stress that if diathermy is employed at all, it should be with extreme caution and exceptionally low amperage. To accomplish the heating effect, photothermy is less troublesome to apply and is more effective. Any treatment given with light should never be applied so that there is any uncomfortable sensation of heat on the skin. The subdermal illumination causes the desired hyperemia and not the warming of the skin. This paper is an outstanding contribution. N.E.T.

Fever Therapy

D. S. COWLES (*Physiotherapy Review*, 21:199, July-August 1941) states that he has found therapeutic high fever produced by electromagnetic induction of value not only in neurosyphilis, but also in other stages of syphilis and in syphilitic optic atrophy and edema of the retina. In syphilis arsenicals and bismuth, as indicated, are used in conjunction with fever therapy. Fever therapy will relieve pain in most cases of arthritis for varying periods of time; more definite and permanent improvement is obtained in certain cases of "the purely rheumatic type." Fever therapy has been used with good results in the treatment of undulant fever in conjunction with sulfanilamide; and also in cases of gonorrhea which have not responded well to sulfanilamide and other methods of treatment. Fever therapy has been found of value in the treatment of rheumatic fever and of chorea in children; in several cases of osteomyelitis it has shortened the time necessary for the development of an abscess and the formation of a sequestrum; it is also of value as an adjunct to other therapy in some cases of allergy, giving asthmatic patients especially considerable periods of relief. In most cases of multiple sclerosis fever therapy delays the progress of the disease, although not relieving the

symptoms. In general, the greatest value of "inductopyrexia" at present "is the increased benefit derived from older methods of treatment when combined with fever." Before fever therapy is instituted, every patient is given a thorough examination, with x-ray study of the heart and lungs, an electrocardiogram and blood and urine analyses. Patients are instructed to increase their daily fluid intake by a quart of water and a quart of a special "prefever cocktail," containing salt, karo syrup, gelatin, the juice of lemons and oranges and beef broth. Fever is induced in a cabinet in which the humidity is maintained at 95 to 100 per cent by a high frequency current passing through a loop of cable under the mattress of the cabinet, generating a magnetic field. In most cases the patient's body temperature is raised to and maintained at 105.8° to 107° F for one to three hours; in some cases, especially in arthritis, the temperature is not raised above 103° to 105° F. The patient is under constant supervision; temperature, pulse and respiration are frequently recorded, till the desired temperature is obtained, then the rectal electric indicating thermometer is used for a continuous record of temperature. Patients are given fluids freely during treatment; cool, wet cloths are placed on face and head; sedatives are given if necessary. The author has also found the hypodermic administration of adrenal cortex hormone of value in increasing the patient's comfort. With this method patients experience little if any malaise after treatment, and the pulse returns rapidly to normal.

COMMENT

Fever therapy is now an established and rational procedure. It can be produced by a variety of methods. It is sometimes called hyperpyrexia, which is a descriptive term. It, however, only complicates things to attempt to introduce a new word, "inductopyrexia," just because the method used by the author utilized one model of a machine made by a manufacturer who applied the name, "inductotherm," to the apparatus. Exactly the same results can be obtained with any other short wave machine when an electromagnetic field is induced with a cable. The naming of physical therapy technics after the trade name of one single machine is to be decried. When short wave diathermy is used to induce fever,

it is not possible to watch the temperature with a rectal electrical indicating thermometer because this will not function in a high frequency field. When methods other than high frequency are used to induce fever, this valuable, constant-reading and, with some models, recording electrical thermometer, is of tremendous value.

In the preparation of the patient for fever therapy, as discussed in this article, the author fails to mention the importance of efficient colonic irrigations. As all substances are more easily absorbed at high temperature, cleaning out the large bowel before fever eliminates many toxins, which, when absorbed during the treatment, cause gastro-intestinal disturbance. N.E.T.

Lupus Vulgaris: Treatment with the Finsen-Lomholt Lamp

R. AITKEN (*British Journal of Physical Medicine*, 4:66, May-June 1941) notes that the incidence of lupus vulgaris has recently decreased in England and Scotland. Persons suffering from lupus vulgaris are under "a serious social and economic disability." In his study of some 280 cases of lupus vulgaris, the author has found that almost 50 per cent followed cervical adenitis. For some years past he has treated cases of tuberculous adenitis with discharging sinuses with light baths; had these treatments not been used, many of these patients would undoubtedly have developed tuberculous skin lesions before the sinus ceased to discharge. The author is convinced that if "the curative effect of ultra-violet radiation in tuberculous adenitis were more generally recognized, a great step forward in the fight against tuberculosis of the skin would be achieved." He believes that reduction in incidence of lupus in Great Britain is due to the fact that in many places tuberculous glands are being treated with general light baths. For the local treatment of lupus vulgaris, the author regards ultra-violet irradiation from a concentrated arc light as the method of choice. He employs the Lomholt modification of the Finsen lamp. With this lamp 70 per cent of the ultra-violet energy generated reaches the lesion under treatment, and hence the time of application is reduced to one hour. The author has used the Finsen-Lomholt lamp in the treatment of lupus vulgaris for near-

ly seven years, and some of the patients treated have been free from all signs of the disease for five or six years; they still report for periodical examinations, as a prolonged observation of lupus patients is necessary.

COMMENT

This paper emphasizes the teachings of Finsen and Sonne. The lamp used is a European model of a carbon arc lamp and is especially adapted for the treatment of skin tuberculosis. With the air-cooled contact lamp now made in this country, similar results can be obtained. N.E.T.

An Evaluation of Methods and Mechanical Devices Used in the Treatment of Peripheral Vascular Diseases

B. T. HORTON, F. H. KRUSEN and C. SHEARD (*Archives of Physical Therapy*, 22:389, July 1941) report a study of the effect of the pavex machine (intermittent pressure and suction apparatus), intermittent venous occlusion and the oscillating Sanders bed on the surface temperature of the toes, an increase in surface temperature being considered an indication of increased blood supply to the part. It was found that the various forms of apparatus studied did not *per se* produce any definite increase in surface temperature, unless the environmental temperature was raised. The Sanders bed is an oscillating bed that "permits the patient to take passive postural exercises over an indefinite period without any effort." An apparatus for intermittent venous occlusion can be attached to one style of this bed if desired. From these studies the authors conclude that if any apparatus is to be used for the treatment of peripheral vascular disease, the oscillating bed is best, provided that it is used at an environmental temperature of 85° to 87° F. "Of all the various factors that influence blood flow to the extremities in both health and disease environmental temperature is of paramount importance."

COMMENT

This study of apparatus for the treatment of peripheral vascular diseases shows how the

same result may be arrived at from different angles. The next step in such a study would be to find out if these diseases are more prevalent in different altitudes, where there is a great difference in environmental temperature. N.E.T.



INDUSTRIAL MEDICINE AND SOCIAL HYGIENE

Case Control Methods in Dispensary Gonorrhea

R. DEAKIN and M. S. WORTMAN (*American Journal of Syphilis, Gonorrhea, and Venereal Disease*, 25:265, May 1941) report the development of a special "case-holding" service for patients with gonorrhea at the Genito-Urinary section of Washington University Clinics, St. Louis, supplementing the methods of treatment previously described (see *MEDICAL TIMES*, June, 1941, p. 274). This case-holding service has developed several methods or "techniques" that are of special importance; these are: Developing a personal relationship with the patient; conducting a social study (a study of the patient's home conditions, work, etc.); collection of important data; education of the patient, especially as to the criteria of cure of the infection; "stimulation"; and case work. In regard to collection of important data more identifying information than name and address is secured. A trial letter is sent to the address given as verification; the other data recorded are: name and address of place of employment; name and address of two persons who will know how to reach the patient; names of relatives; names of children (who may be traced through the public school); name of insurance company, if any; Social Security number. The last two mentioned, the authors state, have not been actually

used to locate lost patients, but "could become important means of identification." "Epidemiological data" in regard to contacts and sources of infection are obtained by means of a questionnaire; it has been found that more complete information is given by this method than by personal interview at first; the way is then "opened to personal interview." The authors prefer the term "stimulation" to "follow-up;" the patient is "kept constantly aware" that the clinic is interested in his welfare and his health, by clinic interviews, home visits, letters and phone calls, so that his attention will not lapse. The term follow-up the authors consider to be "analogous to a fox hunt, in that the patient is allowed to escape and then an attempt is made to catch him." Since this case-holding service was instituted 474 male patients have been treated for gonorrhea at the Clinics. Of these 330 (74 per cent) have been discharged as cured, or are still under observation, the average period of observation being four and a half months; 16 per cent have been transferred to other clinics, returned with reinfections or moved to other cities or other districts where they could not attend the clinic; only 47 (10 per cent) have been "lost." Prior to the institution of the case-holding service, the number of patients remaining under treatment until cured at this same clinic was less than 3 per cent.

COMMENT

A display of personal interest in the welfare of the clinic patient by the personnel of the clinic is the most effective single measure in maintaining proper clinic attendance. The high percentage of patients who have attended this clinic until properly discharged is extraordinary. F.L.M.

Epidemiology of Food-Borne Diseases of the Gastro-intestinal Tract

J. E. PERKINS (*New York State Journal of Medicine*, 41:1438, July 15, 1941) discusses the epidemiology of various food-borne diseases with special reference to conditions in New York State. Scattered outbreaks of trichinosis have occurred in the State due to the consumption of raw or improperly cooked pork. As investiga-

tion disclosed that one of the chief sources of infection of swine is the feeding of raw garbage, a bill was introduced into the State legislature prohibiting the practice but failed to pass. Another food-borne disease that may become epidemic in temperate climates is amebic dysentery; the Chicago epidemic shows that this disease may be spread by contaminated water as well as by food infected by carriers. Bacillary dysentery and disease due to the paratyphoid-enteritis (*Salmonella*) group of organisms in New York State occur chiefly in institutions, especially those for mental patients, and among vacationists in summer camps and summer boarding houses. With mental patients it is often difficult to maintain good standards of personal hygiene, and inmates who assist in the preparation of food may be carriers. In many summer resorts, sanitation is poor and contamination of food, milk and water is inevitable; further State control of the sanitation of such camps and boarding houses is needed. Excluding outbreaks in summer resorts bacillary dysentery shows a higher incidence in rural than in urban districts throughout the State, due to the imperfect sanitation and use of unpasteurized milk in rural areas. While in previous years typhoid fever was chiefly a water-borne disease, it is today spread in most instances by food infected by a carrier. New York State has at present 435 typhoid carriers under control; while no method of "eliminating the carrier state" has yet been found excepting cholecystectomy when the gallbladder is the focus of infection, the author states that the carrier problem "is solving itself," in New York State at least. Most of the carriers are elderly persons, an increasing percentage of them dying annually, while "an insufficient number of new carriers is being produced to take their places." Only two small outbreaks of botulism have been reported in New York State in recent years, both occurring in family groups and due to home-canned or homemade food. *Staphylococcus* toxin food poisoning from cream-filled baked goods has occurred much more frequently in recent years; and in several instances the outbreak has been traced to food han-

dlers with *Staphylococcus aureus* infection. Ham, especially if it has undergone a "tendering" process, may also be infected with the staphylococcus with formation of toxin. Outbreaks of gastro-enteritis may also be traced to chemical poisoning of food from accidental introduction of some poisonous substance into the food (as insect powder), or from utensils, such as, in one instance, cadmium-plated refrigerator trays exposed to a leak of the sulfur-dioxide refrigerant, resulting in the formation of cadmium sulfite.

COMMENT

This article, which draws attention to the rather widespread occurrence of food infections and intoxications in New York state, emphasizes the need for continued and improved food sanitation measures.

Of particular interest is the question of trichinosis. Recent surveys have drawn attention to the rather high percentage of persons who have been infected and while the majority of these persons have not presented symptoms which have led to ante mortem diagnosis of the condition, they may have suffered some disability. Legislation to regulate the feeding of garbage to swine should be passed. F.L.M.

Epidemiological Investigation of Rural Typhoid with the Aid of the Vi Agglutination Test

C. A. ELIOT and W. R. CAMERON (*American Journal of Public Health*, 31: 599, June 1941) report the use of the Vi agglutination test as a "screen test" in the investigation of carriers in "a typical rural county" where typhoid fever has been occurring for many years (Washington County, Md.). It has been found that the Vi agglutination test is positive in the blood of typhoid carriers and of patients with typhoid, but negative in other persons, including those vaccinated against typhoid. In this study seven areas where typhoid is endemic were investigated and the Vi test done on the blood of 100 suspected carriers and contacts. Eight of these persons gave a positive Vi agglutination, and typhoid bacilli were isolated from the stools of 4 of them, or 50 per cent, showing them to be carriers. The reason for the positive Vi reaction in the other 4 cases has not been explained. Stool cultures were nega-

tive in all persons in this group with negative Vi reactions. In previous studies in these same areas, it had been impossible to detect the carriers responsible for the recurring outbreaks of typhoid, who were found with the aid of the Vi test. As typhoid vaccination has been quite widely employed in this County in recent years the percentage of positive H & O agglu-

tination tests was high and did not prove of definite aid in the detection of carriers.

COMMENT

Epidemiological investigations to determine the source of infection in small epidemics and sporadic cases of typhoid fever frequently necessitate the examination of large numbers of suspects. The development of such a test as noted here is of distinct value. F.L.M.



The Immediate Care of Industrial Injuries

T. C. DOUGLASS (*Illinois Medical Journal*, 80:15, July 1941) in training first aid groups in industrial plants, has abolished the use of antiseptics for application to wounds and burns at the time of the injury. This practice is based on the following considerations: Bacteria do not invade the wound for six hours; no antiseptic "will destroy bacteria without also destroying some tissue cells"; as all bacteria will not be destroyed by the antiseptic, "the combination of bacteria and devitalized tissue produces the ideal nidus for the growth of bacteria." The first aid kits employed in industrial plants, according to this plan, contain sterile dressings, splints and triangular bandages. In industrial cases the physician has the advantage of controlling the treatment from the time the injury occurs through trained first aid workers. On the author's plan of treatment, the first aid groups are instructed to apply the sterile dressings from the first aid kit, covering the wound carefully; if hemorrhage is considerable, it is controlled by a pressure bandage, using the large pad from the kit and a triangular bandage. A tourniquet is rarely necessary. The injured part must then be immobilized and the injured person sent to the doctor or the hospital. Fracture cases must be splinted before moving. At the hospital the wound is examined, cleansed with soap and water, irrigated and débrided and closed by suture. Of 350 cases treated according to this plan in the past ten months, only 2 developed

any infection, which was of minor degree. In both these cases a piece of necrotic tissue was finally removed from the wound, indicating that débridement at the time of the injury was incomplete. As some of the workmen in the plant are more than an hour away from where they can receive the doctor's care, minor injuries—scratches and abrasions—are treated "on the job" by the first aid man; the wound is washed with soap and water for five minutes using a piece of sterile gauze from the first aid kit. In a number of such injuries treated in this way, only one infection developed, and in this case the employee tried to soften "the crust" that formed by the application of cold cream. Burns are treated at the time of injury in the same way as wounds, with application of a sterile non-adherent dressing and a splint; in case of extensive burns, the doctor may be called to give an opiate before moving the patient. With head injuries, the patient is left quietly at the site of the injury until the doctor is called to determine whether or not he should be moved. Men with head injuries have been sent home on the slightest indication that this was advisable; this has increased the number of lost-time accidents, but has decreased the total number of days lost.

COMMENT

This article calls attention to the common but questionable first aid practice of applying strong antiseptics to wounds as a prophylactic measure. The results obtained by the authors with the use of conservative measures indicate that the above mentioned practice is valueless. F.L.M.



Fundus Oculi in Diabetes Mellitus

S. H. McKEE (*Archives of Ophthalmology*, 25:773, May 1941) reports a study of the fundus oculi in 2,360 patients with diabetes; 476 of these patients showed retinal changes that were more or less closely related to the diabetes; 205 showed arteriosclerosis of the retinal vessels and 105 retinal hemorrhages. Although evidence of lipemia retinalis was carefully sought, it was found in only one case. The remaining patients showed retinitis of various types, which was classed as diabetic retinitis in 41 cases and diabetic retinitis associated with retinal arteriosclerosis due to cardiovascular-renal disease in 26 cases. Diabetic retinitis is distinguished from renal retinitis by the following characteristics: In diabetic retinitis the patches of retinal exudate show "sharp-cut edges" and are often solid and soapy or waxy looking, and usually distributed irregularly; a star figure is uncommon and never so symmetrical as in renal retinitis; the cotton wool patches of severe renal retinitis do not appear in diabetic retinitis; retinal edema is never as marked and retinal detachment does not occur; retinal hemorrhages are present only in the deeper layers and therefore are not flame shaped, but roughly circular in outline; circular retinal pigment spots that are found in the later stages of renal retinitis do not occur in diabetes. The patients showing arteriosclerosis of the retinal vessels and retinal hemorrhages were in the fourth or fifth decade of life or older; their diabetes was not severe but of long duration. In the last 1000 patients examined, there were 96 from six years up to and including thirty-one years of age; in this group all but 4 showed normal fundi. One had only two small retinal hemorrhages; 2 showed numerous retinal hemorrhages, associated with

a few characteristic chalk-white patches in one instance; one, a woman thirty-one years of age, showed definite hypertensive retinitis with papilledema. Since the introduction of insulin, few diabetics die in coma; reports from large clinics indicate that cardiovascular disease is the chief cause of death in diabetics; the importance of ophthalmoscopic examination lies in the fact that arteriosclerotic changes in the retinal vessels may be detected before there is any other definite evidence of arteriosclerosis; and that by early diagnosis of this condition, it can be better controlled.

COMMENT

This valuable contribution confirms the opinion that the effect of diabetes upon the blood vessels is the cause of intra-ocular changes and not a specific influence. Whether these changes are associated with the diabetic diet is of great interest now and the oculist is in a position to help decide this question by observing the effect of vitamins upon the fundus lesions. R.I.L.

Penetration of Sulfanilamide and its Derivatives into Aqueous Humor of Eye

H. G. SCHEIE and B. F. SOUDERS (*Archives of Ophthalmology*, 25:1025, June 1941) note that the increasing use of sulfanilamide and its derivatives in ophthalmology makes it important to determine whether these drugs can penetrate into the eye, if they are to be employed in intra-ocular infections. Experiments were made on cats under sodium amytal anesthesia, with sulfanilamide, sulfapyridine, sulfathiazole and sulfadiazine. All the drugs were given by stomach tube in doses of 200 mg. per kg. body weight; blood was withdrawn by cardiac puncture six and twenty-four hours after administration of the drug; and samples of the aqueous humor were taken by limbal puncture at the same time. Blood and aqueous humor were analyzed for concentration of the drug given. It was found that sulfanilamide, sulfapyridine and the new derivative sulfadiazine readily penetrated into the aqueous, attaining concentrations that are of therapeutic value. Sulfathiazole, however, was found in only "very small concentrations" in the aqueous humor. This would

indicate that sulfathiazole is ineffective in the treatment of intra-ocular infections. These experimental findings in regard to sulfathiazole have been confirmed in 3 cases in the authors' experience. In one case there was a ring abscess of the cornea; in the second, a penetrating wound of the cornea; and in the third, a postoperative cataract infection. The administration of sulfathiazole had no effect on the infection in any of these cases. Sulfadiazine the authors consider to be "the most promising of the new sulfanilamide derivatives." Since it enters the aqueous as freely as either sulfanilamide or sulfapyridine, "if it fulfills present expectations," it can be used in the treatment of any intra-ocular condition for which chemotherapy is indicated.

COMMENT

The sulfonamides promise much for ophthalmology. Clinical experience will have much influence in settling questions of superiority of the kind to use, and of the dosage. It seems to the commentator that we should be able to get excellent results with less toxicity than has been the common result in the past.

R.I.L.

Allergy of the Eye

W. BAB (*American Journal of Ophthalmology*, 24:759, July 1941) reports that since 1932, he has examined 83 cases with allergic conditions of the eyes; these included 16 cases of hay fever with ocular involvement; 3 cases of vasomotor rhinitis; 12 cases of conjunctivitis and blepharitis; and 39 cases of edema of the eyelids. As 2 of the cases of hay fever also showed edema of the lids, about 50 per cent of the patients in this series showed this symptom. The other cases observed included migraine, scintillating scotoma and solar urticaria with involvement of the eyes. Not all of these cases were tested by the cutaneous scratch method, but in the 12 cases of conjunctivitis, skin tests were definitely positive in 8. The causes of angioneurotic edema of the eyelids were various, but in 8 cases the edema was due to dyeing of the eyelashes; in a previous series of cases of allergic eye disease, the author included 6 cases in which edema of the eyelids was also due to dyeing of the eyelashes; similar

cases have been reported in literature. The dyes employed are not of simple composition; they contain binding material and various ingredients, and it is impossible to determine which substance is responsible for the allergic condition. In one case of scintillating scotoma, the scotoma developed whenever the patient entered a stable, but a true allergy to animal hair could not be demonstrated. In a case of conjunctivitis and blepharitis in an attendant in a zoological garden, hypersensitiveness to animal hair was demonstrated, and the patient was obliged to give up any work involving contact with animals. The treatment of ocular allergy is difficult. Calcium given by mouth in small or medium doses for a long period of time is "a good basis for treatment," but alone is rarely entirely effective in relieving symptoms. In cases where the allergen cannot be ascertained or avoided, a modification of the diet may be useful; in some cases the author has observed that a salt-free diet gave relief; "the trial and error method" is useful in determining the best form of diet. The best local treatment for allergic eye conditions the author has found to be bathing the eye with a lukewarm normal salt solution several times a day for a few minutes to a quarter of an hour. Saline compresses to the eyelids are also of value but not as effective as the bathing of the eyes.

COMMENT

We do not yet know enough about allergy to do much else than try first one expedient and then another. Laboratory men often criticize clinicians because so many factors are involved that deductions are not reliable guides for treatment. It is laboratory work we are now in need of.

R.I.L.



A Scotoma Associated with Menstruation

J. N. EVANS (*American Journal of Ophthalmology*, 24:507, May 1941) reports a study of a scotoma observed in normal women during the menstrual period. The author's usual technique for angi-

oscotometry was employed; the main difference in this technique from that used for ordinary scotometry lies in the emphasis laid on minute objects, used at a short fixation distance and "moved slowly from seeing to blind areas at right angles to the assumed border of the defect." In 22 women, 88 studies were made at the height of the menstrual flow and in the intermenstrual period; all showed a defect in the superior field during menstruation which cleared up in the intermenstrual period. In a small group of pregnant women it was found that this scotoma does not appear at the usual time—two or three days before the expected flow. Further study of this scotoma in small groups of patients in whom more frequent, sometimes daily, studies could be made throughout the menstrual cycle, showed that it was definitely associated with the menstrual period; transient fluctuations could be produced by digital pressure on the eyeball and by inhalation of oxygen. This scotoma is char-

acteristically wedge shaped, with its apex at the blind spot and its base peripheral, occupying the upper field chiefly, above a horizontal line 10 degrees above the fixation point. Its area and shape change with various phases of the menstrual flow; an area of blindness appears two to three days before the appearance of the menstrual flow and rapidly progresses to the typical menstrual scotoma; a day or two before the menstrual flow ceases, it rapidly diminishes. The author suggests that if "supplementary evidence" supports his findings, and the scotoma is proved to be absent in the earliest stages of pregnancy, as his findings indicate, angioscotometry may become a useful aid in the diagnosis of pregnancy.

COMMENT

Angioscotometry is at present a laboratory method but, after work of the kind described here has cleared the way, the practical utility of the method will be worked out so that everyday office workers can employ it without loss of valuable time.

R.I.L.



Vitamin C (Ascorbic Acid) its Therapeutic Value in Inflammatory Conditions of the Cornea

T. K. LANE and D. W. McLEAN (*British Journal of Ophthalmology*, 25: 286, June 1941) report 8 cases of inflammatory conditions of the cornea—corneal ulcer, keratitis and chronic corneal opacities—treated with ascorbic acid given by intravenous injection in doses of 500 mg. per injection daily. This treatment was continued until active inflammation of the eye subsided, then tablets of ascorbic acid were given by mouth. In all cases there was rapid improvement, complete subsidence of the inflammation, and complete or nearly complete clearing of the cornea. In 3 of these cases there were "well established infective conditions with severe corneal involvement" when the vitamin C

treatment was begun; the usual methods of treatment had been ineffective; but improvement was prompt when injections of ascorbic acid were begun. In one case there was keratitis and corneal ulceration of both eyes; only a minimum amount of local treatment was employed, and cure was "both rapid and strikingly complete" under treatment with ascorbic acid. In most of these cases, there was no evidence of general vitamin C deficiency, hence the beneficial effect of the treatment is to be attributed to "flooding the bloodstream with excess of ascorbic acid."

COMMENT

Vitamins divide the oculist's interest with the sulfonamide compounds. We can never get anywhere in the process of evaluation of these remedies without exact diagnoses of the corneal ulcers and inflammations treated.

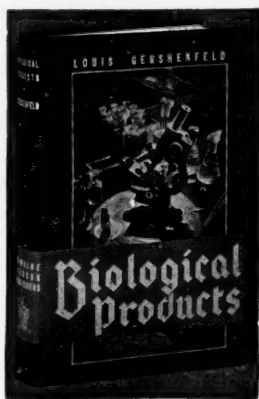
R.I.L.

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Amor—X-RAY ATLAS OF SILICOSIS

By ARTHUR J. AMOR, M.D., M.Sc. Honorary Physician, Clydach Memorial Hospital, Medical Officer, Mond Nickel Co. Ltd., Swansea. Cloth, $7\frac{1}{4} \times 9\frac{1}{2}$, xii + 206 pages, 72 plates, \$8.00.

Not only all industrial physicians but all physicians who have to deal with the pneumoconioses will welcome the very practical help in diagnosis this atlas can give them. Few textbooks of medicine give sufficient space to industrial medicine although the cost in life and disability from occupational diseases has become a serious problem to workers and employers. The drain on humanity by the dust diseases of the lungs, the chief of which is silicosis, is tremendous.

Sir Wilson Jameson, M.D., Dean of the London School of Hygiene and Tropical Medicine testifies in an interesting foreword to fitness and experience of the author. He points out that the majority of the cases used to illustrate the atlas have been certified by the Silicosis Boards or confirmed by postmortem examination so it may be accepted that the radiographs represent the condition stated, and that the diagnosis are accurate, not merely skilled but improved surmises. There are five excellent brief introductory chapters on Etiology—Pathology—Radiological Examination of the Lungs—Clinical Manifestations—Prognosis. The plates illustrate silicosis in various industries and expert physicians engaged in those industries have aided in compiling the atlas. The legends, the descriptions facing each plate are given in both English and French.

Brinton—CEREBROSPINAL FEVER

By DENIS BRINTON, D.M., F.R.C.P. Physician in Charge, Department of Nervous Diseases, St. Mary's Hospital, London. Cloth, $5\frac{1}{2} \times 8\frac{1}{2}$, vii + 160 pages, 4 plates, \$3.00.

Just a little book but an important topical subject. Epidemic cerebrospinal on the grand scale is mainly a disease of wartime, consequently many physicians have had little experience with it. Briefly defined cerebrospinal fever (meningitis) is an acute febrile illness occurring in sporadic and epidemic forms, the cause of which is invasion of the blood by the meningococcus through the nasopharynx. America has been scourged before and with the vast movements of troops and industrial workers it may be again. Fortunately an efficient scheme of chemotherapy has been worked out, and this short book provides a helpful review of the whole subject with the essential features of the newer treatment simply stated. Epidemiology, etiology, pathology, course and symptoms, diagnosis, differential diagnosis, and treatment and prognosis are all well covered.

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Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.



Vitamin Deficiencies

The Avitaminoses. The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By Walter H. Eddy, Ph.D. and Gilbert Daldorf, M.D. Second edition. Baltimore, Williams & Wilkins Company, Inc. 1941. 519 pages, illustrated. 8vo. Cloth, \$4.50.

THE first edition of this book, published in 1937, represented the first comprehensive treatise on this subject in the English language. The past four years have seen such a tremendous increase in the knowledge of vitamins that the authors have been compelled to rewrite the text. They have maintained, however, their original plan of devoting the book to a description of the clinical, chemical and morphological aspects of vitamin deficiency diseases.

The first chapter contains an interesting historical note on deficiency diseases and a classification of all the known vitamins. The next chapter deals with the chemical nature of vitamins. Those which have been chemically identi-

Classical Quotations

● The hard swelling which appears on the back of the hand, is caused by the carpal surface of the radius being directed slightly backwards instead of looking directly downwards. The carpus and metacarpus, retaining their connections with this bone, must follow it in its derangements, and cause the convexity above alluded to. This change of direction in the articulating surface of the radius is caused by the tendons of the extensor muscles of the thumb, which pass along the posterior surface of the radius in sheaths firmly connected with the inferior extremity of this bone. The broken extremity of the radius being thus drawn backwards, causes the ulna to appear prominent toward the palmar surface, while it is possibly thrown more towards the inner or ulnar side of the limb, by the upper end of the fragment of the radius pressing against it in that direction. The separation of these two bones from each other is facilitated by a previous rupture of their capsular ligament; an event which may readily be occasioned by the violence of the injury. An effusion into the sheaths of the flexor tendons will account for that swelling which occupies the limb anteriorly.

Abraham Colles.

On the Fracture of the Carpal Extremity of the Radius. *Edinburgh Med. and Surg. J.* 10:182-186, 1814.

fied are listed and their structural formulae presented. The next chapter, a very important one, deals with the role of vitamins in oxidation-reduction processes in cellular metabolism. Then follows a chapter on normal vitamin requirements.

The remainder of the book is systematically devoted to the nature and functions of each known vitamin and the clinical and pathological changes that follow their deficiency. The book closes with an appendix containing the vitamin content of foods.

It is an excellent, authoritative work. The physician wishing the latest information on the avitaminoses will be well rewarded by studying this comprehensive treatise.

WILLIAM S. COLLENS

Handbook on Diseases of the Skin

Essentials of Dermatology. By Norman Tobias, M.D. Philadelphia, J. B. Lippincott Company, Inc. 1941. 497 pages, illustrated. 8vo. Cloth, \$4.75.

THIS is a comparatively small book that truly gives the essentials of dermatology. There is the usual brief chapter on basic survey that includes the anatomy, physiology, etc., of the skin, and has a particularly good outline of the procedure in history taking and routine of examination.

The arrangement of diseases based on clinical, pathological and etiological concepts is highly satisfactory, and makes reference easy. The description of the diseases is complete, and yet as brief as would be one's notes on hearing detailed lectures. In many cases tables of differential diagnosis are inserted, and therapy is reduced to the satisfactory minimum. Rarer dermatosis are presented sufficiently for tentative diagnosis pending reference to a more complete text for details of the differential. Comparatively few photographs are presented because it is a small book, but the hundred odd plates are well selected.

The reviewer feels that this is a book of real value to the student and practitioner, and recommends it for handy reference.

E. ALMORE GAUVAIN

**Complete Revision of Griffith & Mitchell
On Diseases of Children**

Textbook of Pediatrics. By J. P. Crozer Griffith, M.D. and A. Graeme Mitchell, M.D. Third edition. Philadelphia, W. B. Saunders Company, [c. 1941]. 991 pages, illustrated. 8vo. Cloth, \$10.00.

ON opening this new edition the first change to strike the eye is the omission of the bibliography, so characteristic of the earlier edition. In its place there has been put a list of the authors consulted in the beginning of the book.

Much of the subject matter has been rewritten, and the type and arrangement make for easy reading. The illustrations are clear and are a help to the text. A good index adds to the ease of reference.

In a textbook on pediatrics it is worth noting that here at last is a tendency to simplify instead of complicate, and as an illustration of this can be cited The Divi-

sions of Life in the chapter on Physical Growth and Development, instead of the complicated divisions of many authors.

After all the fol-de-rol about the mental scars left from punishing a child, we are glad to see in this text book of pediatrics the following: "While it (punishment) should be kept at a minimum, punishment when administered should be short, sharp, and to the point.—Corporal punishment

has fallen into disrepute because many parents use it to vent their own exasperation; but properly administered, a sharp spanking is much to be preferred to long-drawn-out and vague verbal attempts to clear the situation."

Another quotation from The Modification

of Cow's Milk coincides with the reviewer's views: "There has been an increasing tendency to use simpler modifications of milk in infant feeding, because mixtures of diluted whole milk will answer all purposes for the healthy infant, and because also there is clinical and experimental evidence that such mixtures are optimum in their amount of protein and amino acids."

Among the many textbooks of pediatrics we would place this among the topnotchers in simplicity, readability, reliability, and as far as one volume can do it, completeness.

ARCHIBALD D. SMITH

Effects of Low Temperatures on Protoplasm

Life and Death at Low Temperatures. By B. J. Luyet & P. M. Gehenio. Normandy, Missouri, Biodynamica, [c. 1940]. 341 pages, illustrated. 8vo. Cloth, \$4.50.

THIS monograph is of particular interest to the general physiologist since it is primarily concerned with the effects of low temperatures on protoplasm. In consequence, the information, while well presented, is not likely to be of interest to the medical reader unless he is concerned with fundamental research. For the investigator, this book, together with the others of the series, should be a valuable addition to his library.

G. B. RAY

The Physician and Society

Medicine and Human Welfare. By Henry E. Sigerist, M.D. New Haven, Yale University Press, [c. 1941]. 148 pages, illustrated. 8vo. Cloth, \$2.50.

THESE three scholarly essays on Disease, Health, and the Physician form the Terry Lectures delivered by Dr. Henry E. Sigerist, America's leading medical historian, at Yale University. In these essays Dr. Sigerist discusses the varied relations between medicine and human welfare as they have developed in time. He analyzes each of the subjects under consideration both historically and sociologically, and shows us how we have arrived at our present state of affairs in medicine. Dr. Sigerist shows how the dominant social character of a period has influenced its medical theory and practice. He expresses his belief in preventive medicine and his conviction that the physician must look upon health as a social as well as medical matter.

GEORGE ROSEN

New Edition of Holmes & Ruggles Roentgenology

Roentgen Interpretation. By George W. Holmes, M.D. and Howard E. Ruggles, M.D. Sixth edition. Philadelphia, Lea & Febiger, [c. 1941]. 364 pages, illustrated. 8vo. Cloth, \$5.00.

THE purpose of the original edition of this work, printed in 1919, was to serve as a "practical aid to those in search of a working knowledge of roentgen interpretation." As in the earlier editions, this object has been attained.

Roentgen diagnosis as applied to the various systems is presented in a simple, nontechnical manner. The text is suitably illustrated with well chosen roentgenograms. The nonroentgenologist may, however, be confused on the several occasions on which "Anteroposterior" is used instead of "Posteroanterior" in referring to the position of the patient in relation to the film.

RICHARD A. RENDICH

History of Science

The Development of the Sciences. Second Series. Edited by L. L. Woodruff. New Haven, Yale University Press, [c. 1941]. 336 pages. 8vo. Cloth, \$3.00.

THIS book is made up of a second series of lectures delivered at Yale University under the auspices of the Yale

Chapter of Gamma Alpha. It is published on the foundation established in memory of Amasa Stone Mather. The whole series of lectures show the influence of medicine on the sciences—that it was the progenitor of them. The study of respiration sounded the death knell of alchemy, and chemistry a lusty infant was born when Robert Boyle began his famous experiments on air. The publication of "The Spring & Weight of the Air," in 1660, showed that a mouse could die in an atmosphere in which a candle failed to burn.

The investigation of nerve impulse and muscular contraction led to the discovery of electrical potentials by Volta and later to electromagnetism by Faraday. The book, as a whole, is interesting not only for the physician but also the general reader for whom it was primarily written. The basic sciences are traced from the beginning up to the present. An extensive bibliography of each chapter is appended.

FRANCIS B. DOYLE

Feeding the Sinus Patient

Diet in Sinus Infections and Colds. By Egon V. Ullmann, M.D. Second edition. New York, Macmillan Company, [c. 1941]. 185 pages. 12mo. Cloth, \$2.00.

THIS edition contains much new material, but the essence is still the same. The author makes a point that diets of an alkaline residue are beneficial in sinus infections and colds. He even believes that colds can be prevented by an alkaline ash diet. Although there are statements to which we cannot subscribe, still the subject matter is of interest, and the author is to be commended for his careful research in this field.

MORRIS ANT

Gifford's New Edition

A Textbook of Ophthalmology. By Sanford R. Gifford, M.D. Second edition. Philadelphia, W. B. Saunders Company, [c. 1941]. 470 pages, illustrated. 8vo. Cloth, \$4.00.

THE need for a second edition of this fine modern textbook is itself the best evidence of its value. The second edition not only maintains the modern viewpoint and includes modern material but has been amplified by addition and revision in many places. Particularly noteworthy, are the sections on relation between fundus

changes and cardio-vascular renal diseases and a classification which is at once simple and clinically helpful.

The entire chapter on the sclera has been rewritten and material additions have been made on the section on therapeutics. This, of course, includes sulfanilamide and its derivatives, the use of vitamins and drugs affecting the sympathetic nervous system.

The illustrations and diagrams are particularly good, although the reviewer has felt that fundus photographs are seldom instructive. For instance, if one compares the two pictures opposite page 266; he will note that the fundus photograph is uninformative as compared to the fundus drawing below it. The drawings show sufficient detail and sufficiently characteristic changes to be of considerable value even without explanatory notes. If the title of the fundus photograph is obscured, one would have the greatest difficulty in pointing out the characteristic features of retinal vessel sclerosis. Fundus photographs for recording grosser changes, doubtless have value.

The emphasis which this book has placed on medical aspects of ophthalmology and local ocular disease seems to make it particularly useful to modern medical students. Just enough emphasis has been placed on the subject of errors of refraction to stimulate the student's interest and give him a general survey of this subject, should he desire to take an elective course in refraction, which many of the schools now offer. In carrying out the same principle, too much detail on surgical procedure is avoided.

All in all, the reviewer can heartily endorse this volume as a textbook for the medical student and a quick reference book for the general practitioner.

JOHN N. EVANS

First-Aid Text

First Aid in Emergencies. By Eldridge L. Eliason, M.D. Tenth edition. Philadelphia, J. B. Lippincott Company, [c. 1941]. 260 pages, illustrated. 16mo. Cloth, \$1.75.

SINCE 1915 this little volume has been used both by lay organizations and the profession. It probably ranks as the best

single volume for such groups as the Boy Scouts, Firemen, Police, and Life Guards, who have to do with immediate emergency treatment until a physician arrives on the scene.

Practically every emergency is discussed, including plant poisoning, snake bites, fractures, dislocations, freezing, burning, et cetera. The symptoms are briefly outlined, the emergency treatment is discussed in a concise manner, which can be easily understood by the layman. The section on fractures and dislocations alone has undoubtedly saved much suffering, and probably lives, as in fractures of the spine.

It is a volume that should be a part of every household as well as every gas station and industrial plant. It is also an excellent adjunct to the desk reference library of every physician.

HERBERT T. WIKLE

New Edition of Hutchison's Dietetics

Hutchison's Food and the Principles of Dietetics. Revised by V. H. Mottram, M. A. and George Graham, M.D. Ninth edition. Baltimore, Williams & Wilkins Company, [c. 1940]. 648 pages, illustrated. 8vo. Cloth, \$6.75.

IN this revision of the principal English book on dietetics, the first eight chapters have been re-written and the others brought up to date.

The introduction by Sir Robert Hutchison, written in 1934, on *The History of Dietetics*, has been retained and furnishes an interesting account of the subject. Part 1, contains chapters on the diet of normal life, part 2, on the nature of foods, part 3, on the principles of feeding in infancy and childhood and part 4, on diet in the treatment of disease.

The revision of the book was made under the circumstances of war making the use of libraries difficult or impossible and creating other troubles. This is not noticeable in the text, however, as the material seems complete and the style of writing pleasant.

WILLIAM E. MCCOLLOM

MEDICAL TIMES, SEPTEMBER, 1941

More International Clinics

The New International Clinics. Original Contributions: Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume II, New Series Four. Philadelphia, J. B. Lippincott Company, [c. 1941]. 299 pages, illustrated. 8vo. Cloth, \$3.00.

THE most recent number of the CLINICS continues to be worth reading. Several good papers on endocrine disorders, gall bladder disease and peptic ulcer in children are especially instructive. Yale medical school contributes several papers, one of the best being by Peters on the management of diabetes.

From Louisville, Thornton Scott presents an interesting case report on Temporal Arteritis, a disease first popularized by the Mayo group.

ANDREW M. BABEY

Merck's Latest Manual

The Merck Manual of Therapeutics and Materia Medica. A Source of Ready Reference for the Physician. Seventh edition. Rahway, Merck & Company, [c. 1940]. 1436 pages. 12mo. Cloth, \$2.00.

THIS well known "Manual" of 1436 pages consists of 256 chapters on "Therapeutic Indications" which were prepared with the collaboration of the late Dr. Bernard Fantus. A section is devoted to poisoning and its treatment and 69 pages to materia medica. A chapter entitled "Miscellany" includes data such as physiologic normals of urine, blood, gastric contents, milk, cerebrospinal fluid, blood chemistry, vitamin table, etc.

This book fulfills its function as a handy book with readily available information for the busy practitioner.

CHARLES SOLOMON



BOOKS RECEIVED *for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.*

The American Illustrated Medical Dictionary. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. Newman Dorland, M.D. Nineteenth edition. Philadelphia, W. B. Saunders Company, [c. 1941]. 1647 pages, illustrated. 8vo. Cloth, plain, \$7.00. Thumb-indexed, \$7.50.

Infantile Paralysis, Anterior Poliomyelitis. By Philip Lewin, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 372 pages, illustrated. 8vo. Cloth, \$6.00.

A Primer for Diabetic Patients. An Outline of Treatment for Diabetes with Diet, Insulin and Protamine-Zinc Insulin. Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M.D. Seventh edition. Philadelphia, W. B. Saunders Company, [c. 1941]. 184 pages. 16mo. Cloth, \$1.75.

Scabies—Civil and Military. Its Prevalence, Prevention and Treatment. By Reuben Friedman, M.D. New York, Froben Press, [c. 1941]. 288 pages, illustrated. 8vo. Cloth, \$3.00.

The March of Medicine. New York Academy of Medicine Lectures to the Laity, 1940. New York, Columbia University Press, [c. 1941]. 154 pages. 8vo. Cloth, \$2.00.

Orbital Tumors. Results Following the Transcranial Operative Attack. By Walter E. Dandy. New York, Oskar Piest, [c. 1941]. 168 pages, illustrated. 8vo. Cloth, \$3.00.

Vitamin K. By Hugh R. Butt, M.D. and Albert M. Snell, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 172 pages, illustrated. 8vo. Cloth, \$3.50.

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Premarital and Prenatal Examination Laws

DURING 1941, five states—Iowa, Ohio, Maine, Utah and Vermont—passed laws requiring the examination, including blood tests for syphilis, by physicians of both the bride and groom. Twenty-five states now have syphilis premarital legislation in effect.

A recent survey of thirteen states revealed that premarital examination laws have prevented a number of infections. Blood tests were made of 677,832 applicants for marriage licenses and 9,917 or 1.3 per cent were found to be infected with syphilis. A high percentage of the infected group said they were unaware that they had syphilis.

It should be remembered that a positive result of a syphilis blood test does not mean that the marriage license is denied. The law aims to postpone the marriage of persons who have syphilis in a communicable form.

Five states—Nevada, Utah, Oregon, Vermont and Wyoming—also passed laws requiring the physician and/or the midwife to take or cause to be taken a syphilis blood test of every pregnant woman attended. This makes a total of twenty-four states that now have prenatal legislation on the statute books. If syphilis is discovered early in pregnancy and treatment is instituted and continued, the mother has a 95 per cent chance of bearing a normal child, free from syphilis.

The American Social Hygiene Association does not recommend that an examination for gonorrhea be included in either premarital or prenatal laws. At the present time adequate bacteriologic examinations are too expensive and facilities for them are not available on the scale that would be required to make the law reasonably effective.

Electrically Heated Flying Suits For U. S. Army Air Corps

THE first large-scale contract for a newly perfected electrically heated fly-

ing suit to keep aviators warm at high altitudes has been awarded to the General Electric Company, Bridgeport, Conn., by the U. S. Army Air Corps. The order is the largest single order ever received by the appliance and merchandise department of the company.

Designed to keep an aviator comfortable through a 130 degree range of temperatures from 70 degrees above zero to 60 degrees below zero, the new flying suit is wired throughout and the amount of heat supplied electrically is controlled to adjust for changes in temperatures.

The new suits are many pounds lighter than the sheepskin-lined garments they replace—an advantage in itself in flying—and will give the aviators far more facility in manipulating instruments, controls, and armaments. And the whole outfit will be supplied at less cost to the government.

General Electric has been working for months with Army technicians in developing and improving the suit. While development work has gone on, factory space and facilities have been made ready, and the suits will begin to come off the production line in six weeks. Valuable background knowledge in making the suit was gained through General Electric's several years of experimentation and testing in the development of its electric blankets.

Combined Tongue Depressor and Laryngoscope

A NEW combination tongue depressor and laryngoscope has been announced by the American Optical Company. Of fine quality, it may be quickly and easily changed from one instrument to the other. The mirror may be turned around to any desired position. The instrument is also provided with a variable focusing arrangement.

Among the features are: (1) Adjustable light; (2) Substantial chrome plate; (3) Standard blade holders; (4) Uses standard flashlight lamp; (5) Standard mirror; (6) Will fit regular American Optical Company handles.

EDITORIALS

The Destination-Port Triumphant

THE European shambles are destroying medical science along with all other means whereby civilization, culture and progress are created and promoted. The dwindling European medical press is proof of this. It is to us that the torch is passed and it is now we who must by its light lead men of Europe and America alike to the destination-port triumphant. In the words of Whitman, addressed to America:

Thou holdest not the venture of thyself alone,
not of the Western Continent alone;

With thee Time voyages in trust, the antecedent nations sink or swim with thee.

Theirs, theirs as much as thine, the destination-port triumphant.

Distorted Sociology

THE advocates of "public medicine," as they call it, are still going strong. They want to bring group medicine to everybody everywhere. Neither compulsory nor voluntary insurance schemes will solve



the problems of preventive medicine and care of the ill. They figure the cost of a system of public medicine at about a billion dollars a year.

These advocates are strangely silent as to what should be done about the incomes, feeding, clothing and housing of the needy.

What avail will bureaucratized medicine be to the basic plight of the families with incomes of \$1,000 a year, comprising 50,000,000 persons?

Why such zeal to give medicine to the needy while all else is withheld?

Dangers (?) In Preventive Medicine

IN an article recently published in the *Annals of Internal Medicine*, Dr. Henry A. Christian made the arresting remark that "Perhaps, after all, a very complete success of preventive medicine may not be a complete blessing." What he meant was that there is a certain amount of danger in immunization against infective diseases because "The recurrence of numerous infectious diseases, especially the contagious diseases of childhood, creates a resistance,

which possibly continues into the next generation. Certainly mild attacks prevent subsequent and possibly more severe attacks. Communities, not so protected, suffer increased incidence and severity with increased mortality when these infectious diseases do appear. . . This suggests that, if preventive medicine completely conquers these diseases and they disappear as a result, a great danger of their reappearance in epidemic form with high mortality may be expected. . . It raises the thought, too, that if a given disease, say diphtheria, is eradicated by protective measures such as the use of toxinantitoxin or toxoid, will it be possible, when the disease is no longer occurring, to persuade people to continue their protective measures or will they become careless and soon an unprotected generation grow up to become the soil for spread of a malignant type of the disease? Past experience with vaccination against smallpox makes this seem definitely a possibility."

Sporadic leprosy, however, is still with us, and most of us represent many generations of freedom from the disease. We should easily fall victims if Dr. Christian is correct in his forebodings. Yet we witness no epidemics. Our camp experience with tuberculosis in the course of large-scale military training will offer another criterion. Just as likely as not nothing will happen to support Dr. Christian's fears; whereupon Dr. Christian will have to provide reasons. Nevertheless, he has given us a thought which we had better keep constantly with us, for then we shall understand possible contingencies which otherwise might prove inexplicable.

Joseph Priestley once said something to the effect that you can not solve any important problem in science without turning up new ones.

Doctor Bridges, Poet Laureate

ROBERT BRIDGES was appointed Poet Laureate of England in 1913. After Eton and Oxford he studied medicine at St. Bartholomew's. He practiced

in London at 52 Bedford Square, W. C. until 1882, retiring then at the age of thirty-eight to devote himself to the writing of poetry. Until this retirement he held important hospital appointments—casualty physician to St. Bartholomew's Hospital, physician at the Great Northern Hospital, and consulting physician at the Children's Hospital. As a poet he invented a great variety of verse forms whose contained substance entitled him to high rank among the later Victorians.

On March 14, 1879, at the age of thirty-five, Dr. Bridges read a paper before the Clinical Society of London (*Transactions*, vol. XII). The title of it was "A Case of Thickening of the Cranial Bones in an Infant, due to Congenital Syphilis." It runs to about a thousand words and is an interesting and well constructed presentation, revealing command of the knowledge and technic of the day.

It was five years before this that Dr. Bridges had published his *Poems by Robert Bridges*, so it can be seen that he was attempting to serve two mistresses at the same time. However, the Poet Laureateship rewarded and justified forty years of poetizing.

Bridges' work was on too lofty a level ever to be popular, and he suffered as a result of sponsoring a movement for reconciliation with German intellectuals two years after the First World War.

Columbia University, which holds Bridges in special esteem, is very rich in first editions and other material pertaining to Bridges. In June of this year a musical service was held in the University Chapel with the use of verses contributed by Bridges to the "Yattendon Hymnal."

It is a strange transition from the reading of the Case Report by the physician to the description of a sunset by the poet:

'Twas at that hour of beauty when the setting sun squandereth his cloudy bed with rosy hues, to flood his lov'd works as in turn he biddeth them Good-night; and all the towers and temples and mansions of men face him in bright farewell, ere they creep from their pomp naked beneath the darkness:—while to mortal eyes 'tis given, if so they close not of fatigue, nor strain at lamplit tasks—'tis given, as for a royal boon to beggarly outcasts in homeless vigil, to watch where uncurtain'd behind the great windows of space Heaven's jewel'd company circlet unapproachably—

Colloidoclastic

DISTURBANCES

PAULO SEABRA

Fellow, National Academy of Medicine

RIO DE JANEIRO, BRAZIL

FOR some years, it has been known that causes, apparently varying greatly among themselves, provoke the same group of symptoms in the human organism. Robin, in 1904, emphasized the similarity of the clinical and serological manifestations of pneumonia to the reaction induced by intravenous injections of metallic suspensions. Then von Pirquet observed the same similarity in the so-called serum sickness (1).

To this series of morbid conditions was added asthma and idiosyncratic sensibilities such as "hay fever," that is, the disturbances which characterize "anaphylaxis," a term created by Richet in 1902 (2).

This organic episode, which rarely becomes dramatic, manifests itself by itching, urticaria, cyanosis, abrupt drop in arterial pressure, tachycardia, convulsions, relaxing of the sphincters, loss of consciousness, asphyxiating phenomena, fever, and sweating. In other words, a complete cardiac, nervous, glandular, and thermic anarchy.

Widal assigned an independent identity to this organic cataclysm and denominated it "colloidoclastic shock" or shock due to colloidal disequilibrium because he ob-

served that this shock corresponds to a marked alteration of the physical and chemical constants of the colloids of the blood plasma, such as increased superficial tension, variations of the pH, the oncotic pressure (power of swelling), the indexes of flocculation, cryoscopy, nephelometry, etc., all of which may be found well described in special works (3).

DURING the experimental study of the mechanism that determines "colloidoclastic shock" much was learned from the fact that this state could be produced at will, by intravenous injections of particles of inert substances such as lycopodium, starch, and also insoluble salts and metals.

Such a variety of substances soon eliminated all thoughts of a chemical nature concerning this phenomenon. Various other factors suggested the belief of a cerebral or bulbar origin as, for instance, the fact that a simple emotion could produce shock and that in this are included some nervous phenomena such as relaxation of the sphincter muscles and vomiting. Furthermore, Kopaczewski (1) had demonstrated that a patient under general anesthesia did not experience shock. Therefore, it appeared as if the flocculated colloids of the blood stream, or the large granules inject-

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ed, produced a sudden and violent but temporary thrombosis of the tiny capillaries that irrigate the cerebrum or bulb, which really seemed to be corroborated by the presence of small blood effusions that were encountered in autopsies.

HOWEVER, the verification of "colloidoclastic shock" in some of its various manifestations in animals previously decerebrated, especially the work of Zunz (4), not only fortified the idea of a phenomenon not located in the central nervous system as accepted by Drouet (5), but decidedly favored the hypothesis of mechanical irritation of the sympathetic nerve terminations of the vascular endothelium. This hypothesis, although still in controversy, remains the incontestable glory of Auguste Lumière (6).

Powdered substances, suspended in an appropriate liquid, may present themselves in the form of exceedingly fine granules, i. e., ultramicroscopic, and so form a true colloid (Fig. 1-a). Under such circumstances, such granules do not cause shock. To determine shock, either the granules must be of sufficient size or they must be agglutinated so as to form large clots as shown by Lumière (Fig. 1-b). In this connection, it should be clearly understood that the word "colloidal," as applied to shock by Widal, does not refer to any injected colloid but, on the contrary, to those colloids that normally exist in the blood.

Furthermore, these blood colloids only produce shock when they suffer a disturbance that causes them to flocculate. Therefore, shock is caused by large clots or granules formed within the blood itself or introduced into it. The circulatory torrent sweeps these clots along the vascular walls and irritates the sympathetic nerve terminations of the endothelium, thereby causing a reflex action which brings about an intense dilatation of the blood vessels.

NOW let us see just what happens when "colloidoclastic shock" occurs. Let us suppose, conservatively, that the vas-

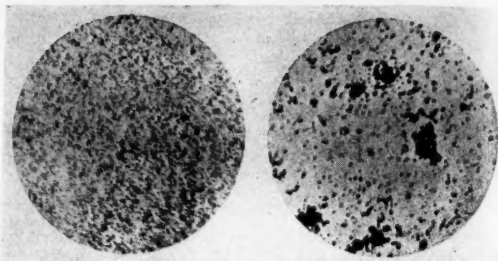


Fig. 1
(a) [Lumière (6)] (b)

cular dilatation triples the diameter of the blood vessels. The arterial pressure would then fall abruptly, as may be seen by comparing (a) and (b) of Fig. 2. This is the first symptom of shock. To the heart, then, there would occur something quite similar to what would happen to the motor of a derrick if the cable should break while under full load. It would run wild and wreck itself if it could not be brought under control. This is tachycardia, claudication, or better, complete cardiac anarchy.

A vasodilatation causes almost all of the blood volume to flow into the great viscera, which produces a lack of peripheral circulation as evidenced by paleness, or bulb anemia as evidenced by unconsciousness, followed by the relaxing of the spincter muscles, convulsions, etc. This is complete nervous anarchy. Within a brief period, after the clots cease their apocalyptic career, they are immobilized in the form of large capillary thrombi scattered here and there, causing sanguineous or merely serous extravasation. If in the bronchial tree, crucial asthmatic attacks occur. In other parts of the organism typical manifestations prevail. Such shock may be avoided without general anesthesia. It is only necessary to insensibilize the nerves of the vascular endothelium by injecting a local anesthetic. Experiments have demonstrated this to be a fact (6).

A great emotion or an olfactory traumatism can induce shock by a true vicious circle of sequences because such violent disturbances, acting upon nerve centers, can

provoke reflexly either a peripheral or an internal vasodilatation with the corresponding characteristic redness or paleness. Now we know that the walls of blood vessels function as semipermeable membranes separating on the inside the blood and on the outside the interstitial liquids (Fig. 3-a). The equilibrium maintained between these two liquids through this membrane is the "equilibrium of Donnan", of which hydrostatic pressure is one of the fundamental factors. When vasodilatation occurs, the hydrostatic pressure within the vessel falls and the vessel walls then function as ultrafilters. Now colloids do not pass through

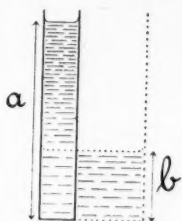


Fig. 2

ultrafilters but crystalloids do. Therefore, under such conditions, the crystalloids pass from the interstitial liquids directly into the blood stream (Fig. 3-b).

WE know that the albumins of the blood, like all other albumin, are lyophil colloids. That is, their disperse phase absorbs the liquid contained in the dispersion medium; they then swell, thereby increasing their size, which renders them flaccid and elastic like moist gelatin, without clear lines of demarcation between the disperse phase and the dispersion medium (Fig. 4-a). For this reason, the disperse phase does not irritate the nerve terminals in the course of their continuous movements. Now Loeb has demonstrated (7) that the addition of crystalloids to a liquid can force the disperse phase to the iso-electric point, under which circumstance their state changes from turgescence to syneresis. Then they lose their water content, shrink, wrinkle, become rigid and angular, and flocculate, all of which is visible in the ultramicroscope (Fig. 4-b).

These granules, which were formerly smooth and harmless, now become aggressive to the sympathetic nerve terminations of the endothelium and cause shock.

Such shock is usually less dramatic, thanks to the slowness with which the clots are formed. If these clots are ultracentrifuged and then injected into another animal, they will produce shock, as has been demonstrated experimentally (6). Clots of this nature may also be formed or originated by pathogenic germs found in the blood stream.

THE precipitation of foreign substances that enter the circulation by way of the digestive tube or other channels is a preliminary step in the elimination of such substances. However, when the organism does not provide an adequate precipitant to render harmless the aggressive agent, it suffers the consequences, but prepares itself for future defense. This ability to defend itself can be transferred from one animal to another by blood transfusion or by the injection of the ultracentrifuged plasma (6).

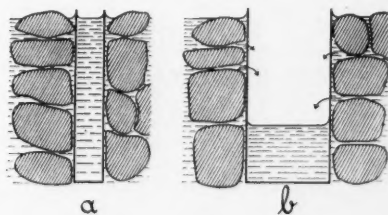


Fig. 3

In case of a renewed invasion defensive precipitation is immediate. It is true that shock does occur but this is of secondary importance because the first object of the organism is to free itself of the harmful foreign substance. This objective is achieved by concentrating the foreign substance in urticarial patches or through some other "reliquat." This process of defense is so strong that it may cause death and for this reason it is paradoxically called "anaphylaxis" or, in other words, "lack of defense."

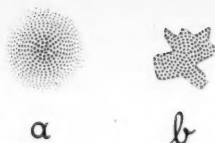


Fig. 4

THERMAL anarchy completes the picture of "colloidoclastic shock."

The thermo-regulating process of man and superior animals is still a subject of exhaustive research by many investigators. Du Bois may be cited among best authorities in this field. His notable contribution in this field of research is summed up in a brilliant series of conferences delivered last year at Stanford University (8).

Let us refer to Fig. 5, which represents Du Bois' balance. In one pan are assembled the factors producing calories while in the opposite pan the factors of heat loss are contrasted, the indicator of the balance being the temperature. On one side we find shivering and the unconscious tensing of muscles, while on the other side sweating and enhancement of skin circulation occur. Fig. 6 shows diagrammatically the mechanism of thermoregulation in which the hypothalamus center controls, as the principal elements, the vascular constriction and the secretion of the sweat glands (9).

The initial stage of shock is a concentration of the blood in the interior of the large viscera in detriment to the peripheral

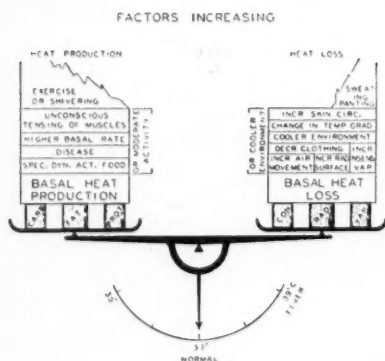


Fig. 5
[DuBois (9)]

circulation so that internal heat losses cease, with further aggravation by heat produced by muscular phenomena. These conditions originate a vertiginous rise in temperature until the circulation is returned to the thermo-regulating center that reacts by producing abundant sweating, which in turn provokes an abrupt drop in temperature from 102° F. or more, to 95° F. or less. After this, the organism, if still alive, returns to its normal state.

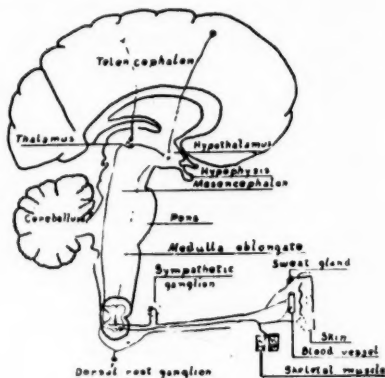


Fig. 6
[DuBois (8)]

IN closing, permit me to relate a true story. One day I received a visit from a thin, medium-aged man. Advised by a friend, he had come to state his case to me in a last attempt to place himself in a condition that would permit him to comply with his duties of state. This man had resided in Rio de Janeiro for many years, and had already noted that whenever he was obliged to go to the docks to say good-bye to a friend, he invariably became sick.

In time, this individual rose to the highest office of one of our states and it was then that he discovered his handicap. On one occasion, he landed under a caustic sun among perspiring voters assembled in a compact mass. As soon as he approached them, in spite of his excellent disposition, he became intensely indisposed and soon fell down unconscious. Instead of speeches of welcome, he received large patches of

urticaria spread all over his body and thereafter, upon approximating any sweating constituents, he was seized with intense suffering. This was politically a serious matter because it rendered him incompatible with his fellow citizens.

Finally, he admitted that he was a physician and assured me that he would faithfully follow any suggestion that I might choose to make. I told him that he had a "very interesting" case of anaphylaxis quite similar to those caused by ipecac dust or plant pollen which claim so many "hay fever" victims. I ventured that his state was probably greatly aggravated by an excessive use of condiments, shrimps, and shellfish together with too much salt and vinegar, all of which affected the colloidal stability of his blood plasma. He was surprised to hear this and pleaded guilty but promised to adopt a more simple diet in

the future, as well as to reduce the salt to a minimum, and to abandon the vinegar.

I FURTHER suggested that after one or two months, he might cautiously experiment with a variant of the method recommended by Besredka. That is, he might make rapid and repeated visits to the docks and even try to converse with the workmen and stevedores. If necessary, he might support these trials by the use of peptizants or anticoagulants such as calcium chloride, recommended by MacDonagh (10), or magnesium thiosulfate, preferred by Lumière (11), and as a preventive of vasodilatation, a little epinephrine (ephedrine was not then in use).

Several years later, we met again. He related how he had successfully adapted himself to the masses.

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RUA FERREIRA PONTES, 148.



Military Surgeons Meeting

AMONG the many medical meetings of this year, one of the most timely and interesting is that of The Association of Military Surgeons of the United States to be held Oct. 29th-Nov. 1st at the Brown Hotel, Louisville, Ky.

All members of the medical profession are invited to attend as guests and it is particularly hoped that as many members of the Medical Defense Committees as possible will come.

War medicine and surgery have changed considerably since the previous emergency. Mechanization of armies and air bombardments have created new and difficult problems in traumatic surgery and methods of treatment of wounds and extreme abrasions.

For every member of the profession who can be present at this meeting there will be something of special interest.

The session concludes with a mass review of Military Medicine and an inspection of Fort Knox.

PSYCHONEUROPATHY

in Cushing's Syndrome

WILLIAM LINTZ, M.D.

Brooklyn, N. Y.

PSYCHONEUROPATHY is not cited as a symptom of Cushing's disease; yet, in my experience, some abnormality is present in the majority of cases. It is true that in most individuals it is mild and apt to be overlooked; occasionally, it is very severe and, therefore, obvious. If we bear in mind that in medicine, as a rule, we find only what we seek, it will help us with the diagnosis and treatment.

When we consider the anatomy and physiological pathology of this disease, we see that we have a right to expect mental and vegetative disturbances in this syndrome.

It is admitted by everyone that the secretions of the pituitary have a profound effect on the diencephalon. The diencephalon is located at the crossroads between the telencephalon, the most recently developed part of the central nervous system, and its more ancient part, the lower portion of the brain stem and spinal cord. In this location it not only influences, by means of the groups of nuclei which it contains, but it also holds the chief position between, the initiating and inhibitory centers in the cerebral cortex and the lower, subservient, functional areas. Thus, in turn, it influences and brings the vegetative system in relation with the psychic zones of the brain on the one hand and, on the other, portions of the brain in which reside simpler, subordinate reflex centers.

THE hypothalamus and the pituitary (which are of special significance in this disease, because they are located in the diencephalon) are functionally interdependent, and they can scarcely be discussed separately. Furthermore, the hypothalamus contains the anterior division of the nuclei of the tuber cinereum and the group of cells known as the supra-optic nucleus, the posterior division containing the paraventricular nuclei and those overlying the mamillary bodies. The anterior is parasympathetic in function because of the relationship of its nuclei to the vagus and pelvic nerves, which belong to the craniosacral outflow, while the posterior division is considered as the suprasegmental center in the thoracolumbar outflows of the autonomic system. The dysfunction of the vegetative nerves in this disease, manifested as buffalo obesity, alteration in sex function and morphology, vasomotor tone, sleep, intestinal peristalsis, appetite, et cetera, is the result of dysfunction of the diencephalon caused by the pathological secretion of the pituitary. I believe that most of the symptoms of Cushing's syndrome are produced along the pathways described. This accounts for the fact that adrenal adenomas, arrhenoblastomas, et cetera, give similar symptoms because they likewise affect the same nervous system; hence the frequent confusion which exists between these conditions and Cushing's syndrome.

Case 1

A FEMALE Jewess, aged 23, a dress examiner, was admitted to the hospital June 8, 1934. The chief complaint as given by a parent was extreme weakness. In addition, severe headache, pains in the extremities and lumbosacral region, constipation that alternated with diarrhea, stuporous confusion, drowsiness, and the presence of psychosis were named. She had been working steadily until one week before admission, examining finished dresses, when weakness, stupor, drowsiness, and a state of "unconsciousness" became so unbearable that she had to be taken home. For some time she had felt weak and had gained weight. Her previous illnesses were measles and pneumonia. Menstruation began at fifteen: irregular, every two, three, or four months, lasting one day, with a very scanty flow. The family history was essentially negative. There were no near or distant relatives who suffered from psychosis or any neurologic disease.

Physical Examination—The patient was silly, confused, spoke of weddings, funerals, moving. She laughed and grinned, wanted to go through the window, was discovered on top of the bureau. She paraded naked in the corridor; did not recognize her parents. She was incontinent as to urine and feces, and filthy as well. She was completely irrational and non-cooperative. Her obesity was of the buffalo type, confined to the lower half of face, neck and trunk. She was round shouldered. Extremities were normal. Her skin was dark and dusky, bizarre rashes were present, and the typical linea atrophica were present on the lower abdomen and shoulders. The hair was dark and long, of male distribution, and a virtual beard was present on her face. She had huge, pendulous mammary glands. For nine weeks at the hospital the blood pressure varied from 140-150 systolic and 100 diastolic with a pulse of 75-120, and respirations 20. At the beginning she complained of severe abdominal pain, evoking crying. Objectively the abdomen was soft and nothing could be palpated. All other findings were essentially negative.

Anthropometric measurements — Weight 151½ pounds; height 58 inches. Distance from cervical spine to coccyx was 24 inches. Length of upper extremities was 26 inches, and that of lower extremities was 29½ inches. Measurement across breast was 38 inches, and around the abdomen 40 inches.

Laboratory Examinations

The urinalysis and blood count were negative. The Wassermann and the Friedman, Aschheim-Zondek tests were negative.

Blood chemistry—
 urea nitrogen 20 mgm. per cent
 sugar 83.6 mgm. per cent
 calcium 11 mgm. per cent
 phosphorus 3.5 mgm. per cent

Blood chemistry January 8, 1935—
 urea nitrogen 19 mgm. per cent
 sugar 100 mgm. per cent
 calcium 12 mgm. per cent
 phosphorus 2.3 mgm. per cent
 uric acid 3 mgm. per cent
 creatinine 2 mgm. per cent
 cholesterol 55 mgm. per cent

Sugar tolerance curves
 Blood before administration of glucose 100 mgm. per cent

Urine before administration of glucose negative

Blood one hour after administration of glucose 250 mgm. per cent

Urine one hour after administration of glucose negative

Blood two hours after administration of glucose 150 mgm. per cent

Urine two hours after administration of glucose 0.1 per cent

On later examination—
 Blood before administration of glucose 100 mgm. per cent

Urine before administration of glucose negative

Blood one hour after administration of glucose 177.5 mgm. per cent

Urine one hour after administration of glucose 0.58 per cent

Blood two hours after administration of glucose 100 mgm. per cent

Urine two hours after administration of glucose negative

Basal metabolic rates
 7-26-34 plus 53
 7-31-34 plus 59

Readings after pituitary irradiation
 1-8-35 minus 2
 1-10-35 plus 12

Specific dynamic reaction plus 12

NaCl in urine with usual diet 10.65 grams

NaCl in blood with usual diet6 mgms.

NaCl in urine with usual diet plus ten grams of NaCl given orally after breakfast 21.00 grams

NaCl in blood with usual diet plus ten grams of NaCl given orally after breakfast 720 mgms.

Electrocardiograph was negative.

Several consultations were held, which resulted in the following reports:

Psychiatry—On June 13, 1934, Doctor Joseph Smith reported, "Patient is very confused. She behaves in a silly manner. Her conversation is irrational. She speaks of someone who moved, of weddings and

funerals. She laughs frequently. She may have dementia præcox. No hallucinations can be elicited. When pressed for an answer, her reply is often normal. Physically, she shows definite hypopituitary symptoms, such as masculine hair distribution and obesity. Give her thyroid and pituitary.

Doctor Smith reported further on August 2, 1934, after patient had received pituitary irradiation treatments, "Patient has recovered mentally. As she is ready to go home we will diagnose her case as acute confusion."

Dental—Examination by Doctor Abraham Berger showed, "Malocclusion and unerupted teeth."

Ophthalmology—"No pathology of eye."

Gynecology—"All pelvic organs normal."

Roentgenology—"No increased intracranial pressure. Normal sella turcica. Vertebrae, pelvis, humerus, tibia, and fibula show no evidence of decalcification."

Case 2

A FEMALE Italian, aged 15, a nursemaid, was admitted to the hospital January 25, 1935. She complained of dyspnea, choking, and pressure within the throat, which disappeared simultaneously within a half hour, without wheezing or coughing. She suffered from diffuse abdominal cramps with an average of four to six loose bowel movements daily. She complained also of severe temporal, frontal and occipital headaches, of dizziness, restlessness, insomnia, extreme exhaustion, severe lumbosacral backache, painful extremities, pruritus, rashes, dry, harsh and scaly skin. She had gained more than one hundred pounds in the previous two and one-half years. In addition to the usual childhood diseases, she gave a history of hysterical paraplegia at the age of six. Menstruation began at 13, was very scanty, and exceedingly irregular, having occurred only six times from that age until the date of her admission.

Physical Examination—The patient presented a marked buffalo type of obesity, which was confined to the neck, head and trunk, with exaggerated round shoulders, but which spared the extremities. Her skin was

dry and rough, and bizarre rashes, erythema, acne, purpura, cyanosis and subacute hemorrhages were present. Acrocyanosis was present. There were extensive purplish lineæ atrophica over the abdomen, buttocks and hips. Hair was present on her face, upper back and sacrum, where it was long, coarse and black, and over the pubes it had male distribution. The breasts were large and pendulous. The tongue was thick and purplish. The deep reflexes were elicited with difficulty. Retinoscopy was negative. The pulse, temperature and respirations were normal. Her blood pressure was 130 systolic, 80 diastolic.

Anthropometric measurements—Weight 230 pounds; height 64½ inches; head circumference 23 inches; arm span 64 inches; length of torso 21 inches; leg 33 inches long; chest circumference 44½ inches; interspinous distance 27 inches; interacromial 14 inches; pelvis: intertrochanteric 10.2 inches, intercrystal 12.9 inches, external conjugate diameter 9.8 inches; supine spine 27 inches.

Laboratory Examinations

The urinalysis and blood count were negative. The Wassermann and the Friedman, Aschheim-Zondek tests were negative.

Blood Chemistry—	
urea nitrogen	14.3 mgms. per cent
uric acid	3.5 mgms. per cent
blood sugar	107.0 mgms. per cent
blood sugar	145.0 mgms. per cent
blood calcium	13.0 mgms. per cent
blood calcium	16.0 mgms. per cent
phosphorus	2.8 mgms. per cent
cholesterol	214.0 mgms. per cent
sodium chloride	normal

Sugar tolerance curves	
Blood before administration of glucose	100 mgm. per cent
Urine before administration of glucose	negative
Blood one hour after administration of glucose	187 mgm. per cent
Urine one hour after administration of glucose	0.5 per cent
Blood two hours after administration of glucose	187 mgm. per cent
Urine two hours after administration of glucose	0.5 per cent
Blood three hours after administration of glucose	166 mgm. per cent
Urine three hours after administration of glucose	negative
Sedimentation rate 24 mm. in 2 hours.	
Icterus index—4.5	

The electrocardiogram was negative. X-ray examination—"The sella turcica is small, of the semi-closed type. The thymus is not enlarged. There is evidence of decalcification of the long bones and lumbar spine."

Case 3

F. P., aged 30, an American housewife, had been extremely nervous, restless,

and irritable, and had hallucinations, and "imaginings". She was melancholic, and accused everyone falsely. Her mentality was poor and people called her "queer" in the common sense of the word. She complained of dizziness, of temporal headaches that were unbearable, and of pains in the back of her neck. According to her, lumbosacral pain was excruciating, and the extremities were also very painful. Extreme exhaustion, hyperhidrosis and flushes were present, but no drowsiness. There was precordial distress and palpitation, especially on exertion. She also complained of polyphagia, pyrosis, and indigestion. Patient said that she had been perfectly normal with a weight of 135 pounds until her marriage twelve years previous, which was followed by a persistent increase in weight, and the development of conspicuous blue lines over the abdomen and hips. During an early gestation, five years after marriage, she lost 75 pounds, but after the puerperium, weight again steadily increased, and at the time of this examination, the patient weighed 267 pounds. Menstruation, which began at 12, formerly was regular and lasted 5 days. At this time, however, it was irregular, occurring every six to eight weeks, and lasting only part of a day. The patient's previous and family histories were negative with the exception that a sister had weighed 300 pounds.

Physical Examination—The patient presented a buffalo type of obesity, which was limited to the torso, neck, and head. The skin was covered with bizarre rashes. The extremities appeared cold, blue, and cyanotic. Herpes labialis was present. A moderate growth of dry hair was noticed on the face and on the upper and lower extremities, with female distribution of the pubic hair. Very conspicuous, long, blue, atrophic, longitudinal lines were present over the abdomen. The mammary glands were huge. Tachycardia was present with a pulse of 99. The extremities were extremely tender. The pelvic organs were normal. The blood pressure was 205 systolic and 140 diastolic.

Anthropometric measurements—Weight 267 pounds; height 63¼ inches; head cir-

cumference 23½ inches; bisacromial 15½ inches; chest 48½ inches; girth—abdomen 48½ inches; pelvis: intertrochanteric 14 inches, anterior spine to sternal notch 16 inches, anterior spine to exterior condyle 36 inches; acromion to tip of finger 26 inches.

Laboratory Examinations

The urinalysis and blood examinations were negative except for a plus-minus Wassermann reaction.

The basal metabolic rate was plus two.

Discussion

PITUITARY irradiation is a life saving procedure in this disease, and may be used as a differential therapeutic diagnostic test to differentiate between Cushing's syndrome and "adrenalismus." Subjectively these patients attain excellent health, although their external configuration has been little altered. The general appearance, however, is much improved by the disappearance of 75 per cent of the hirsutism. The improvement in the psyche is nothing short of miraculous and can be observed from the very first treatment. In a few treatments even the disgustingly filthy, apparently hopelessly psychotic girl, became normal. These patients remain cured to this day. The administration of all kinds of endocrines was unsuccessful, but following irradiation, menstruation was promptly and markedly improved, and today is regular and normal in every way. I do not believe that amenorrhea was due to atrophic and sclerotic ovaries as claimed. The Aschheim-Zondek tests were negative in these cases. The fibrotic, atrophic ovary must be a late result of the lutein stage. The basal metabolic rate became normal. The purple atrophic lines, which I believe are caused by a vegetative system factor, have greatly improved, or completely disappeared, irrespective of loss of weight, which in one case was negligible. Irradiation has slight influence on blood pressure. If hypertension, as claimed by Cushing, is due to an invasion of basophiles in the posterior lobe, one has a right to expect better results upon pituitary irradiation.

THE two forms of functional mental disorders, dementia praecox, and manic depressive psychosis, account by far for the largest number of admissions to the state hospitals. In case number one, referred to above, both of these conditions were diagnosed at various times by an expert psychiatrist, who strongly advised confinement in an institution for the insane. Yet, irradiation of the pituitary promptly and permanently cured the sickness. I wonder whether there are others confined in insane asylums who have a similar etiology and would be helped by a similar therapy. There is no doubt in my mind that the pituitary was responsible for her psychosis, and that the irradiation of it was responsible for the cure. For five weeks she was most carefully studied, and during that time all sorts of treatments were tried without the slightest benefit. Immediately after the first irradiation treatment, improvement could be noted with complete recovery following completion of the series. Now, five years later, the patient is perfectly normal. There was no trace of mental disease in the family history.

That mental disturbances are associated with endocrine changes such as the menopause, pregnancy, and Graves' disease is well known. That certain psychoses are cured by endocrine therapy needs no corroboration, e.g., insulin, estrin, et cetera. That endocrine pathology is found on autopsy of the insane has been demonstrated by the Japanese and others. Anencephaly is usually associated with an absence of the pituitary.

Instead of awaiting the maximum development of symptoms, or the autopsy report, which usually is done, we must learn to diagnose these cases early. As in other endocrine disturbances such as Graves' disease, for example, where we must frequently base a diagnosis on a single finding like nervous manifestations or heart changes, or metabolic disturbances, so in this syndrome a diagnosis frequently has to be made in the presence of any one of the following: abnormal intestinal peristalsis as intractable, unexplained diarrhea, buffalo obesity, linea atrophica, hypertrichosis, amenorrhea, et cetera. When this

is done, it will be found that these cases are not so rare as generally supposed, and pituitary irradiation will accomplish the maximum good.

CASE 2 presents a leading symptom of dyspnea and choking, which has not been previously described in pituitary basophilism. This symptom, which brought her to the hospital, is hard to understand and difficult to interpret. It is not of asthmatic or cardiac origin. Was it due to a large thymus in spite of the fact that the x-ray and fluoroscopic examinations were negative? Many such autopsy findings have been reported. The high blood calcium and bone decalcification would support such a view. Was the choking and dyspnea a conversion manifestation of a convulsion? Epilepsy has been described previously in pituitary basophilism, and conversion episodes of the sort are not infrequent. Yet there were no other symptoms or stigmata of epilepsy, and a family history is absent. I believe that the choking and dyspnea resulted from a disturbance of the vegetative nervous system, produced by a pathological pituitary secretion along the pathways described above. Air hunger, of which these patients so frequently complain, is a milder form of the same condition.

When the patient was six years old, a diagnosis of "hysterical paraplegia" and endocrine disturbance was made following close observation in one of our leading hospitals. Unquestionably this is a rare diagnosis to make on a six-year-old child. Might it not have been caused by a pituitary disturbance along the pathways I have outlined? Might not this indicate that the pituitary plays a role in hysteria?

The abdominal pain, which frequently leads to needless surgery, is due, I believe, to vegetative disturbances which cause excessive spasm and peristalsis, rather than to the local action of pitressin. Vegetative disturbance is the rule in this disease.

THE patient who constituted Case 3 had undergone various forms of endocrine therapy for weeks without the slightest benefit. She refused pituitary irradiation, and because she readily made all sorts of

unreasonable accusations, I did not urge her. I have not seen her since.

THESE patients are misfits, sullen, irritable and, in general, they tend to make life miserable for their families and every one around them, because their brains do not function properly. They are disliked and avoided. Yet, much can be done for them by the proper simple treatment, not of supplying them with additional endocrines, but by subtracting from what they already have with pituitary irradiation.

Diagnosis

- 1—Mental symptoms.
- 2—Typical obesity of the torso, head, neck and shoulders, sparing the extremities.
- 3—Purple linea atrophica.
- 4—Bone decalcification.
- 5—Hypercalcemia.
- 6—Lumbosacral pain.
- 7—Headache and dizziness.
- 8—Weakness and exhaustion.
- 9—Abdominal pain and frequent loose bowel movements.
- 10—Polyuria.
- 11—Tendency to hypertension.
- 12—Hyperglycemia with diminished sugar tolerance.
- 13—Rashes, dry sensitive skin, and ecchymosis.
- 14—Insomnia and restlessness.
- 15—Hirsutism and male distribution of pubic hair.

16—Amenorrhea.

17—Polyphagia, polydipsia, polyuria.

These were the symptoms presented by the cases discussed.

Conclusions

- 1—A definitely psychotic female was rendered promptly and permanently normal mentally by pituitary irradiation.
- 2—The majority of cases with Cushing's syndrome have mental changes, which may be mild or severe.
- 3—Menstruation which was scanty and irregular became definitely established and functioned normally after pituitary irradiation.
- 4—On account of its location, the pituitary influences to a marked degree the mind and the nervous system. The symptoms cited result therefrom.
- 5—Pituitary irradiation did not reduce the blood pressure.
- 6—A pathological pituitary secretion is responsible for the mental condition.
- 7—Pituitary irradiation would be indicated in certain forms of mental disorder associated with this syndrome, even in atypical cases.
- 8—Dyspnea and choking may be leading symptoms in Cushing's syndrome.
- 9—The possible role of the pituitary in hysteria would seem a fertile field for investigation.
- 10—Vegetative disturbance may be responsible for the abdominal pain.

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- 36 PLAZA STREET.



Tuskegee Institute Infantile Paralysis Center

THE Tuskegee Institute Infantile Paralysis Center, dedicated January 15, 1941, provides special facilities for the care of Negro sufferers from the after-effects of Infantile Paralysis.

Located on the beautiful campus of the

Institute and forming a special unit in the hospital services provided by the John A. Andrew Memorial Hospital, this newly completed Center was made possible by a grant of \$172,256 to Tuskegee Institute by the National Foundation for Infantile Paralysis, which has since 1938 administered the funds annually raised through the President's Birthday Celebrations.

R E S E A R C H

Proceedings of the Research Society of the
Long Island College of Medicine, Hoagland
Laboratory, February 14, 1941.

EXPERIMENTAL PRODUCTION OF APICAL LESIONS OF TEETH IN MONKEYS AND THEIR RELATION TO SYSTEMIC DISEASE

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(Abstract)

THESE experiments were designed to produce infection at the apices of monkey's teeth in order to determine the significance of focal infection to systemic disease. Lesions at the apices of teeth resembling those found in man were readily produced by simply exposing the pulp canal to the mouth flora. Several teeth were infected by introducing known pure strains of bacteria into the pulp chamber. Seventy-five per cent of the teeth treated in this manner developed lesions. Of the infected teeth, 59 per cent were positive for one or more kinds of bacterial strains. *Streptococcus viridans* was the organism most frequently isolated from this site. Many of the teeth that were bacteriologically negative had lesions at their apices. Bacteria were also isolated from a small number of the control teeth. Systemic changes in the infected monkeys failed to develop, as demonstrated by daily temperature, urines, frequent blood counts, blood sedimentation rates, blood cultures, and by clinical obser-

vations. One monkey developed a cellulitis and osteomyelitis from an infected molar tooth. This work

does not mean that infected teeth are not significant in bringing about a disease process within the body.

Discussion: Dr. Wade Oliver, Department of Bacteriology, Long Island College of Medicine. (Abstract) Dr. Burn reported that blood cultures were 19 per cent positive when taken 24 hours after the operation. The time of culture in relation to the dental operation is important. Okell and Elliott reported that blood cultures were 75 per cent positive for *Streptococcus viridans* if taken 5 minutes postoperatively in infected cases and even 34 per cent were positive from apparently healthy mouths; while all taken from 10 minutes to 8 hours after extraction were negative.

I have been intrigued by Dr. Burn's references to his recovery of an unidentified anaerobic gram negative bacillus. Could this have been *B. melaninogenicum*, first described by Oliver and Wherry in 1921? Burdon has reported its constant presence

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in the normal human mouth, principally at the dentogingival margin, as well as its presence in great numbers in 22 cases of

clinically typical pyorrhea alveolaris. I know of no search for it in the monkey's mouth.



GALLOP RHYTHM AND OTHER TRIPLE HEART RHYTHMS

A Phonocardiographic and Clinical Study of their Mechanism and Significance

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(Abstract)

PHONOCARDIOGRAPHIC studies of gallop rhythm with reference tracings of other cardiac events reveal that the extra sound always occurs at a moment of rapid flow of blood into the ventricle, due either to hydrodynamic pressure gradients or to active auricular contraction. Three types of gallop rhythm may thus be produced: (1) **GALLOP OF RAPID VENTRICULAR FILLING** in which accessory sound appears during the rapid ventricular filling phase in early diastole; (2) **AURICULAR GALLOP** in which the additional sound originates during auricular systole; (3) **SUMMATION GALLOP** which is occasioned by the reinforcement or merging of the rapid ventricular filling with auricular contraction in cases of tachycardia; (4) **QUADRUPLE GALLOP** which may occasionally appear, produced by two distinct accessory sounds.

It is suggested that the term gallop rhythm be restricted to the type of triple heart rhythm in which the heart is embarrassed. All other cases of three sounds in the cardiac cycle would preferably be designated as triple heart rhythms, with or without gallop tempo, as the case may be. The latter describes the acoustic characteristics of the rhythm, but does not imply the ominous prognosis of gallop rhythm.

The auscultatory characteristics in con-

junction with the attendant clinical features will often suffice to distinguish the diastolic triple rhythms from each other and from gallop rhythm. Borderline cases, however, can be differentiated only by means of phonocardiography.

Gallop rhythm may sometimes be the first acoustic manifestation of a failing heart. Its occurrence is of grave omen, but not necessarily of fatal ultimate prognosis. It may disappear with the improvement of the cardiac condition. Its presence is an indication for continued rest and active therapy.

Discussion: Dr. J. Hamilton Crawford, Department of Medicine, Long Island College of Medicine. (Abstract) Dr. Bendove and his associates are to be congratulated on the excellent records which they have obtained. The advent of amplification methods for the study of heart sounds has greatly simplified the interpretation of such records. The early ones obtained with the string galvanometer are not comparable. The differentiation which has been made of true gallop rhythm and triple rhythm is extremely valuable as it aids in differentiating serious conditions from those of little importance. Although mechanical records are valuable they do not replace auscultation as they fail to reproduce the quality of the sounds, which is of the utmost importance.

THE ACTION OF NINHYDRIN UPON SERUM PROTEINS AND ANTIBODIES

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(Abstract)

WHEN an aqueous solution of ninhydrin (triketohydrindene hydrate) acts upon proteins and antibodies, the following changes take place:

1. A deep blue to violet color is usually produced. This coloring matter is not bound to protein, as it is easily removed by chloroform or dialysis.

2. The free amino-nitrogen of the protein is reduced by about 40 per cent.

3. The iso-electric points of the proteins are shifted toward the acid side. Thus, that antibody globulin of horse serum that is iso-electric at pH 7.0 becomes iso-electric at pH 5.0.

4. The altered proteins and antibodies are precipitated by acids at pH 4.6 to 5.0 even in the presence of salt.

5. The altered proteins are more readily salted out by neutral salts than the original proteins.

6. The altered proteins are not coagulated by boiling at neutral reactions.

7. The antibody fractions that are iso-electric at pH 7.0 produce little or no blue color on treatment with ninhydrin.

8. Antibodies react more rapidly with ninhydrin than do the native serum pro-

teins.

9. The agglutinin titer of antityphoid horse serum is not diminished by ninhydrin treatment, while that of rabbit antityphoid serum is actually increased. The agglutinin and mouse protective titers of antipneumococcic sera are somewhat diminished.

10. High concentrations of antibody per milligram of protein nitrogen were obtained.

Discussion: Dr. Alfred Goerner, Department of Physiological Chemistry, Long Island College of Medicine. (Abstract) Dr. Eggerth has used an ingenious method of attack to study the labile proteins of antibodies without sacrificing those properties which are of biological interest. By means of the ninhydrin reaction chemical changes were effected in the antibody globulins which may serve in differentiating these from normal serum proteins. These differences are in the amount of amino-nitrogen lost by each type of compound and the extent to which they react with ninhydrin. The new physical properties acquired by the ninhydrinized antibodies should prove of value in their isolation and thus lead to further studies of their structure.



Medical Care of Soldiers

Soldiers in New York state army posts and camps are provided with excellent medical care, according to the editors of the *New York State Journal of Medicine*, who visited the camps through the courtesy of the military authorities of the Second Corps Area.

Hospitals are adequate in size and well

equipped with the most recent mechanical, electrical and other professional apparatus. Drugs and other expendable supplies are well stocked. The hospitals are being conducted with well-organized services in medicine and surgery and with most of the special services, such as eye, ear, nose and throat, urology, x-ray, psychiatry, well represented.

Organized Medicine

AND THE CRISIS

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DURING the past decade the American people have undergone a revolution, the meaning and consequences of which they do not yet know. Now, before we have either comprehended or recovered from that revolution, we have become involved in a great World War which will subject us to sacrifices, pains and pressures far beyond anything which most of us now expect or imagine. Again, Uncle Sam is giving a benefit performance for the rescue of world democracy. His present position is comparable to that of the high dive performer who has just started his dive. He is now in the grip of forces beyond his control, and if this world performance is to end in success rather than tragedy, it behooves all of us rapidly to prepare and firmly to hold the safety net of national defense.

Issues which several months ago were prominent on the American scene have been dwarfed to some extent by the ever-expanding process which we have termed national defense. This is a proper phenomenon; yet there are elements in this situation which are dangerous in varying degrees. In the field of medical economics this is especially true. In our concentration on the larger aspects of armament, and in our concern for onrushing events, we

have tended to relax our vigilance against the menace which the medical profession has been battling for the past several years. I refer to state medicine.

IT is the well-grounded opinion of the majority of physicians that no sweeping, decisive action is likely to be taken with regard to the establishment of state medicine as long as the present emergency exists. The government is too busy with more vital matters of self-protection and has more immediately urgent channels into which to pour tax money, to be concerned for the moment with a wholesale readjustment of national medical economics. An undeclared truce may be said to exist between the medical profession and the advocates of state medicine—not a complete truce, to be sure, but a marked reduction in scope and intensity of action on both sides.

But we must not forget that, defense or no defense, the issue is not yet settled. At the close of the existing crisis, whenever that may come, we may expect old internal battles to be resumed, and the suspicion is well founded that the first of these to be fought out to a definite decision will be the state medicine question and all its ramifications.

HOWEVER, the present lull is merely comparative, and the forces of state medicine have not been altogether inactive. They have been busy laying the groundwork for future campaigns; informed observers feel that they are preparing to press the issue just as soon as national and international conditions permit. Already a wedge has been driven into organized medicine, and it has been firmly fixed by the courts. The recent decision in the District of Columbia, declaring that the American Medical Association is a "trust" and a fit subject for governmental attempts to "purge" such a "trust", has been hailed as an important victory for the advocates of state medicine. It is clear that organized medicine suffered a severe setback, although the courts made an almost too obvious attempt to placate the individual physicians by finding the officials not guilty and the Association guilty of violating anti-trust laws. The system, apparently, not personalities, is the object of attack.

Nevertheless, it is slight satisfaction to know that the individual physicians are not criminals, when we realize that, in the eyes of the law at least, the organized profession now holds a "criminal record." The ways of justice are indeed unfathomable.

OUT of this seemingly incongruous picture, certain facts do appear. The actual battle against state medicine is just beginning, and it would appear that the enemy has drawn first blood. We may confidently expect an intensified campaign to begin just as soon as world conditions become moderately settled. Let us not forget that the Wagner Health Act now waits patiently in a Senate committee-room, ready to spring out when the air clears.

What is the responsibility of the medical profession in such a situation? Just this: To continue to contribute in every way possible to the defense program, to work for the improvement of the national health in these times which demand healthy citizens, to alleviate human pain and suffering just as it has done throughout the ages, to cooperate with government in its present militarization process; but, in

doing all these things, not to relax in the slightest degree in opposition to the false and malignant theory which says that it is the function of the state to provide medical attention for its citizens.

This is a time for a medical defense program. It is a time to develop medical leadership against the day when the medical profession shall be obliged to be strong in argument and action. This is no small task. Upon our shoulders rests the responsibility for maintaining one of the nation's greatest institutions—free and independent medicine—the institution upon which the American people have every right to rely for the protection of their health and the prolongation of their lives.

No one has greater confidence in, or greater desire for the effective realization of, our national strength than the medical leadership of the United States. The record of its efforts at cooperation, its prompt response to appeals for assistance, bespeak its awareness of the common danger.

THE revolving wheel of destiny has brought us into the midst of one of the great crises of civilization. Whether mankind goes backward or forward for decades to come depends in large measure upon our courage and our wisdom in this testing period. We are called upon to face grim facts, to endure hardships and make sacrifices far beyond any for which our generation has yet shown either the strength or the capacity. If we awaken in time, if God grants us the wisdom to choose and the will to follow the difficult road of mutual trust and mutual sacrifice, we will emerge from this darkness into a brighter day in which we and our children can lead the world in the pursuit of a nobler and finer civilization. If we fail, another tragic ending will be written to another glorious chapter in humanity's upward striving. Let us believe and pray and strive to the end that all elements of our population, forsaking narrow selfishness, will have the vision to see and the strength to follow those converging paths which lead to the concentration of the full energy of a mighty nation of free people.

MEDICAL TIMES, OCTOBER, 1941

CONTEMPORARY PROGRESS

Experiences in the Treatment of Subacute Bacterial Endocarditis with Sulfanilamide, Sulfapyridine and Sulfathiazole



H. E. HEYER and F. K. HICK (*Annals of Internal Medicine*, 15:291, August 1941) report 15 cases of subacute bacterial endocarditis treated at the Research and Educational Hospital of the University of Illinois with sulfanilamide, sulfapyridine or sulfathiazole; in 4 of these cases more than one of these drugs was used in the course of treatment. One of the patients, treated with sulfanilamide alone, has been cured, and is living and well two years and nine months after treatment was begun. Another patient is living and free from symptoms five months after the onset of the disease; in this case rapid improvement was obtained with sulfathiazole after sulfanilamide had failed. Of the remaining patients 11 have died and 2 were living at the time of the report but continuing to show symptoms. In these 13 cases the most "striking" therapeutic effect of the sulfonamide drugs was the drop in temperature following their administration; this was most marked with sulfapyridine, but was also noted with sulfanilamide and sulfathiazole. The average duration of the fatal cases was 8.9 months; this does

not indicate a significant prolongation of life by the therapy. In one of the fatal cases a complete remission of symptoms for three weeks was

obtained; in none of the cases in which the treatment failed to give permanent results was the blood rendered sterile. A review of the literature shows 26 cases in which apparent cure of subacute bacterial endocarditis with the sulfonamide drugs has been reported, but in none of these cases was the patient under observation for as long a period as the authors' patient who is well two years and nine months after treatment was instituted. The authors are of the opinion that the use of the sulfonamide drugs is justified in all cases of subacute bacterial endocarditis, and that treatment "should be begun as soon as the diagnosis is made and continued as long as possible." If any one of the drugs does not bring about clinical improvement, another should be tried. Only a minority of the patients will show definite improvement or cure, "but this fortunate group can be found only by clinical trial."

COMMENT

Interesting observation. It will be also interesting to see how sulfadiazine works in these cases.
M.W.T.

Studies on Ascorbic Acid Deficiency In Gastric Diseases

J. B. LUDDEN, JAMES FLEXNER and IRVING S. WRIGHT (*American Journal of Digestive Diseases*, 8:249, July 1941) report a study of the dietary histories of 23 patients with various types of gastric lesions and 5 patients with no gastric lesions. In all but one of these patients the prescribed diet or the diet voluntarily adopted by the patient had been very low in vitamin C. One of these patients had "frank clinical scurvy;" in this case the diet had been deficient in vitamin C for fifteen years; 26 patients had sub-clinical scurvy as shown by determination of the plasma ascorbic acid and vitamin C saturation tests. After an intravenous test dose of 1 gm. ascorbic acid, the administration of 1.5 to 4 gm. for three to seven days was sufficient to bring the plasma values of ascorbic acid to a normal saturation level in 25 patients; 3 patients required larger doses—5.2, 7 and 11.4 gm. respectively for eight to seventeen days. The daily oral dosage required to maintain vitamin C saturation was determined in 6 patients; for 3 patients without gastric lesions this maintenance dose was 75 to 100 mg.; for 2 patients with chronic superficial gastritis and gastric ulcer, 100 mg.; for one patient following total gastrectomy, 200 mg. These findings indicate that gastric lesions *per se* do not interfere with the absorption of vitamin C; only where such lesions are associated with achlorhydria or diarrhea is

there deficient absorption of the vitamin. This is to be attributed to the fact that vitamin C is absorbed chiefly from the small intestine. In such gastric conditions as superficial gastritis and gastric ulcer, vitamin C deficiency due to the use of diets deficient in this vitamin can be corrected by the oral administration of ascorbic acid.

COMMENT

Anything which offers any hope for superficial gastritis and atrophic gastritis is most welcome since there is very little in the literature about it. It would seem reasonable to use ascorbic acid along with the diets for gastric ulcer and superficial gastritis.

M.W.T.

Treatment of Peptic Ulcer with a Magma of Magnesium Trisilicate

D. N. SILVERMAN and R. A. KATZ (*Southern Medical Journal*, 34:638, June 1941) report a study of the action of a 20 per cent. magma of magnesium trisilicate in the therapy of peptic ulcer. Magnesium trisilicate is non-constipating

and may occasionally have a laxative effect, as it forms magnesium chloride by interaction with the hydrochloric acid of the gastric secretion. Magnesium trisilicate never causes alkalosis, which may result from the continued use of some of the antacids employed in the treatment of peptic ulcer. This is due to the fact that the magnesium chloride formed by the interaction of the trisilicate with hydrochloric acid is reprecipitated in the small intestine as magnesium hydroxide. The preparation of magnesium trisilicate used also has excellent adsorptive properties. This prepa-

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ration has been employed in the treatment of 10 cases of gastroduodenal ulcer under careful observation. Its neutralization and adsorptive properties were studied in each case by the use of an indwelling nasal tube and frequent gastric analyses; the dosage necessary to control symptoms in each patient was determined on the basis of the findings. In the average case, the dose found to be necessary was 2 drams every hour. In this series of cases, pain and other symptoms were relieved by the treatment; and the associated hyperacidity and hypertonus subsided. The authors make "no claim for cure" of peptic ulcer, but present this preparation of magnesium trisilicate as "a further possible help toward a yet unrealized therapeutic goal."

COMMENT

This would seem a good addition to the treatment of peptic ulcer. The results of treatment with a magma of magnesium trisilicate may prove more effective than the tablets.

M.W.T.

Blood and Urine Chlorides in 22 Cases with Diabetes Insipidus

H. BLOTNER (*American Journal of Medical Sciences*, 202:222, August 1941) notes that there is considerable difference of opinion among investigators as to the chloride balance in diabetes insipidus. As the disease is characterized by the excretion of large amounts of urine, this might involve an increased excretion of sodium chloride, with a disturbance of the chloride balance. Most of the studies of chloride excretion in diabetes insipidus have been based on rare cases; the author has, however, made a study of the chloride content of the blood and urine in 22 patients with diabetes insipidus over a period of five years; the effect of the administration of pituitrin has also been determined. It was found that the serum chloride concentration in these patients with diabetes insipidus was within normal limits, even when they had taken no pituitrin for several years; the administration of pituitrin did not affect the serum chlorides appreciably. The total excretion of chloride in the urine showed some variation from day to day in these patients, but did not exceed the

normal range even when large amounts of urine were excreted. The administration of pituitrin did not alter the chloride excretion perceptibly. In one case, a considerable restriction of fluid intake for one day also did not cause any definite change in the chloride excretion or in the serum chloride concentration. The author concludes that the diuresis of diabetes insipidus does not affect the urine and serum chlorides in the same way as diuresis in normal persons; and also that pituitrin, although an effective antidiuretic, does not have any definite effect on the chloride balance in these cases.

COMMENT

This article should be read in its entirety.
M.W.T.

Complete Roentgen Ray Studies of the Gastro-intestinal Tract in 400 Arthritics

E. W. SPACKMAN, T. F. BACH, C. W. SCULL and RALPH PEMBERTON (*American Journal of Medical Sciences*, 202:68, July 1941) report a complete roentgenological study of the gastro-intestinal tract in 400 cases of arthritis of various types and at various stages of the disease. Special attention was paid to the size, position, tone and function of the various organs. A similar study was made in 100 normal controls; and on the basis of the findings the normal limits in regard to size and position of the various organs, in relation to various types of body build, were established. In the 400 arthritics, some abnormality in structure and position or function in the gallbladder, stomach, or small intestine was found in approximately 60 per cent; the colon showed abnormalities in at least 80 per cent. In the colon hypotonicity and atony were noted more frequently than spasticity. The gastro-intestinal "complex" that was found to be most nearly characteristic of arthritis is ptosis, dilatation and/or atony of the colon. Deviations from the normal in the gastro-intestinal tract are more frequent and more marked in the later stages of arthritis than in the early stages; they tend to "parallel the general condition of the patient." Whether these gastro-intestinal abnormalities are causative factors in the arthritic

syndrome or consequences of it, they should be treated by suitable methods according to the conditions found in each case.

COMMENT

These are interesting observations. They

give a clue as to the constitutional background in a patient with rheumatoid arthritis. Also these findings may be a result of the infection. It would seem reasonable to devote some attention to this "complex" when treating these patients.

M.W.T.



Three Years' Experience with Vitallium in Bone Surgery

C. S. VENABLE and W. G. STUCK (*Annals of Surgery*, 114:309, August 1941) in their study of metal alloys used in bone surgery in 1936 found but one, vitallium, that was completely "passive", that is, nonelectrolytic, in body fluids, and thus produced no pathologic reaction in bone or other tissues, and was itself not corroded. When vitallium was first introduced, it was not strong enough or sufficiently malleable for general use, but it has since been improved so that vitallium plates, screws, etc., are now sufficiently strong for any type of operation. With the cooperation of sixty-one other surgeons in various parts of the country, the authors have collected records of 1,227 cases in which vitallium has been employed in the treatment of various types of fracture in the last three years. Solid bony union was obtained in 92.6 per cent of these cases and delayed union in 3.8 per cent; nonunion resulted in only 3.6 per cent. Infection or draining wounds followed the use of vitallium in only 55 cases, or 0.044 per cent. In all these cases the infection could be attributed to severe compound injuries or septicemia; in no case was the wound infected because of the use of the vitallium appliance. In the cases in which vitallium appliances were subsequently removed, the surrounding bone showed no erosion or discoloration. These

results confirm the authors' conclusion that the most important quality in any metal alloy for use in bone surgery is "complete passivity" or electrical inertness to body tissues and fluids.

COMMENT

The conclusions of the authors in regard to the use of vitallium in bone surgery are based upon a review of the records of over twelve hundred cases in which vitallium has been used by themselves and sixty-one other surgeons. It is quite generally recognized that there is a decided advantage in the use of screws, plates and fixation apparatus made of this material. Special study has been given to the amount of tissue response, if any, to the presence of this metal, and the observation has been made that vitallium plates are relatively inert and have no unfavorable influence on the incidence of infection. Internal fixation of compound fracture with or without infection is becoming more widely accepted and the vitallium plate and screws, inciting little or no inflammatory reaction and inducing the minimum of absorption about the screws, have become available and dependable in the fixation of fractures even in the presence of gross infections. The use of this material should aid in reducing the spread of infection and check to some extent progressive necrosis in this type of fracture.

T.M.B.

The Bacterial Content of Air In the Operating Room

T. B. RICE, L. A. WEED and H. RAIDT (*Surgery, Gynecology and Obstetrics*, 73:181, August 1941) report a study of the bacterial content of the air in three operating rooms at the Indiana University Medical Center. Petri plates were exposed at various times of day and in various sites in each room, and bacteriological studies were also made on the air collected with the Wells air centrifuge. Samples were collected on eighty-five days at hourly intervals. It was found that at all seasons

of the year the bacterial content of the air was higher in the morning hours (8 to 11 A.M.) than in the afternoon hours, irrespective of the number of operations performed and the number of people present in the room. No satisfactory explanation for "this type of distribution" of bacteria was found. The bacterial content of the air of the operating rooms was slightly lower in the summer than in the winter months, but "significantly so" only if the windows were kept open in the summer. The Petri dish method was not found to be satisfactory for determining the bacterial content of air; while the Wells centrifuge has certain disadvantages, the authors consider it the best method for investigations on a large scale. The results of their investigations lead the authors to conclude that the importance of air contamination as the source of infection of a clean surgical wound has been "greatly overemphasized."

COMMENT

This most recent investigation of the bacterial count of the air in the operating room confirms a long entertained conviction that the importance of air contamination as a source of wound infection has been stressed much too strongly.

The surgeon must of necessity evince an active interest in the healing of his wounds. An occasional check-up on his results will frequently prove highly enlightening and most desirable. The phenomenal surgical achievements of the past quarter of a century have been made possible by a rapid advance in surgical thought and practice. Surgeons are exercising nice discrimination in recognizing and evaluating the various factors and circumstances rightfully associated with satisfactory wound healing. They have adopted a rigid aseptic technic. The modern surgical operative procedure in the achievement of its purpose has become truly a ritual of the highest order. It is not the mysterious "hocus-pocus" suggestive of quackery, but a ritual worthy of the unique service which the surgeon undertakes in following the best tradition of his calling. Any single detail in this ritual may when considered separately seem nonessential. The very details, however, are particularly impressive in that each calls special attention to the necessity for thoughtful care and constant vigilance on the part of the surgeon and other members of the operating room personnel.

T.M.B.

The Use of Adrenal Cortex Extract In the Treatment of Traumatic Shock of Burns

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J. E. RHOADS, W. A. WOLFE and W. E. LEE (*Annals of Surgery*, 113:955, June 1941) have found from a study of cases of severe burns that death in such cases occurs early and is due to secondary shock. At the University of Pennsylvania Hospitals, a special study has been made of the "fluid shift" in patients severely burned, by means of serial hematocrit and plasma protein determinations; the amount of plasma to be transfused was calculated on the basis of these findings. It was found that when large plasma transfusions were given soon after the burn had occurred, the plasma volume was not increased as much as had been anticipated, and any rise in volume obtained was temporary. This indicates the continued extravasation of plasma during this stage. In order to prevent this continued extravasation of plasma by decreasing capillary permeability, adrenal cortex extract was given intravenously to 7 patients with severe burns; 5 to 10 cc. of the extract were given every six hours to adults, the dose for children being in proportion or larger. All of these patients were given citrated plasma transfusions. In this group, the rise of plasma volume was more rapid and more sustained than in patients with burns of equal severity given plasma transfusions but not adrenal cortex extract. It was found that patients given adrenal cortex extract show a marked chloride retention; hence sodium chloride should not be given these patients unless it is definitely indicated by chemical analysis of the blood. The use of adrenal cortex extract is recommended for the treatment of patients with extensive burns, to reduce the amount of plasma necessary to restore the circulation to normal, to reduce the amount of extravasation of plasma protein into the interstitial tissues and to shorten the period of "stagnant anoxia" thus reducing visceral injury to a minimum.

COMMENT

Davidson revolutionized the treatment of burns when, as resident surgeon of the Henry Ford Hospital, he conceived a method of treatment which even today is believed by many to be the best available. This contribution aroused a renewed interest in the subject of burns among physicians the world over. Many

variations in treatment have been elaborated, but there is a general acceptance of the essential principles of the treatment. Shock with its associated diminution in blood volume and loss of fluid into the tissues, if not promptly and efficiently combated, proves fatal altogether too quickly.

Plasma, blood and fluids have been used, but in this paper the authors stress the advantage of adrenal cortex extract. It has been their experience that their efforts to meet circulatory deficit and restore circulatory balance were many times more successful when in the treatment they made use of this extract. Other problems arise in the clinical course of a burn case, but the most pressing problem to be met is the initial shock, which is all too frequently fatal.

T.M.B.

Early Rising and Ambulatory Activity After Operation

D. J. LEITHAUSER and H. L. BERGO (*Archives of Surgery*, 42:1086, June 1941) report the results of early rising and ambulatory activity following appendectomy and other abdominal operations. Since January 1938, the authors have performed 383 appendectomies; in 13 of these cases, the appendix had ruptured, and the patients were not considered suitable for the early ambulatory treatment. In the remaining 370 cases, the average period of confinement to bed after operation was one and a half days, and the average period of hospitalization two and three-tenths days. In one case a deep wound infection developed in a patient who was ambulatory on the first day; she was returned to bed on the third day and treated with sulfanilamide; she was again ambulatory on the eighth day. In another patient who had been out of bed on the first postoperative day and had left the hospital on the fourth day, an abscess developed at the base of the cecum; he was returned to the hospital and the abscess drained; he was out of bed for short periods on the third day and made a good recovery. There were minor wound infections in 15 other patients not necessitating their return to the hospital. There were no other complications in this series. In carrying out the "early rising" regimen, patients are given 2 ounces of water every two hours during the first twenty-four hours; then the diet is gradually increased. After operation patients are turned frequently in bed and instructed to

take deep breathing exercises at regular intervals. Patients whose condition is satisfactory are allowed to sit up on the edge of the bed, or to stand beside the bed for a few minutes during the deep breathing exercises on the first postoperative day. Such exercises are repeated during the day and the patients allowed to walk about the room and sit in a chair for a few moments. On returning to bed, they sit on the edge of the bed and recline on the right shoulder. They leave the hospital by automobile, and return to the surgeon's office for dressing of the wound on the sixth postoperative day. It has rarely been necessary to see patients in their homes. Results were so satisfactory with this regimen in the appendectomy cases, that it has also been used in 66 other abdominal operations, including cholecystectomy, hernia operations, hysterectomy and other pelvic operations. In these 66 cases, the average period of confinement to bed was one and nine-tenths days and the average hospital stay after operation eight and nine-tenths days, including 3 cases in which the patients stayed at the hospital for twenty-one to thirty days because of biliary tract drainage, but showed no complications. The postoperative regimen was much the same in these cases as in the appendectomy cases, except that in the sicker patients the exercises out of bed were instituted more slowly, and periodic rhythmic contractions of the voluntary muscles and breathing exercises were carried out in bed for the first day or two. There was no immediate postoperative death in this group, but one patient developed a gastrojejunal ulcer after gastro-enterostomy which resulted in death from hemorrhage and shock. In the entire series of cases there were no pulmonary complications and no case of thrombophlebitis; prolonged confinement to bed after operation, the authors believe, is a factor in prolonging the pulmonary congestion and circulatory stasis that produce such complications. Ambulatory activity, however, is not indicated in any patient who shows marked abdominal distention or who has "an insecure wound." Early rising and graduated ambulatory activity, on the other hand, increase the rate and depth of breathing and increase the tonus

and use of the skeletal muscles, "thus improving the circulation in the pulmonary, systemic, portal and lymphatic systems."

COMMENT

Surgeons have always been impressed with the necessity of getting their patients up and about at the earliest possible moment. This is particularly true in the case of the aged, the infirm and the debilitated. With the rapid advance in surgical technic and the elaboration of anesthetic methods approaching the ideal, the modern surgeon is inclined to shorten the period of confinement to bed and to stimulate functional activity during the stay in bed.

Too frequently too little thought is given to this matter. The article here abstracted should stimulate and challenge the surgeon to get more patients up at an earlier time. Not that the surgeon may add to his own personal renown or indeed "take the surgical world by the tail," but with the idea of insuring to his patient a more rapid and more satisfactory recovery. It would be foolish to establish a definite rule that would result in forcing all patients out of bed P.D.Q. There are many and varied circumstances associated with each case requiring careful consideration. To establish such a routine in all cases indiscriminately would be downright inhuman, cruel, and hardy to the extreme.

We can all subscribe quite heartily to any method or combination of methods which will safely and with reasonable surety return the patient to his usual state of good health and functional activity at the earliest possible moment.

T.M.B.

A Method of Preventing or Diminishing Peritonitis from Leakage After Intestinal Resection or Perforation

H. KOSTER (*American Journal of Surgery*, 53:248, August 1941) reports 10

cases of intestinal resection in which leakage into the peritoneal cavity was prevented "by the simple expedient" of exteriorizing the anastomosis and closing the wound around it. The peritoneal cavity is sealed within a few hours, preventing infection, and the suture line "can be repaired electively." The same method of exteriorizing the involved loop of intestine has been employed in 4 cases of intestinal perforation. When the bowel is exteriorized it is covered with wet dressings; the serosa soon takes on the appearance of healthy granulation tissue. The exteriorized loop was repositied in the abdominal cavity after thoroughly washing it in saline solution, without ill effect. In none of the cases in which this procedure was used did peritonitis or intraperitoneal abscess develop.

COMMENT

In his original article Dr. Koster presents a very valuable and a very sensible procedure for preventing or diminishing peritonitis from leakage after intestinal resection or perforation. The adoption of this method in suitable cases will no doubt save many lives. The temporary exteriorization in itself adds no risk. Furthermore, it is generally recognized that secondary closure of abdominal wounds after replacement of bowel temporarily exteriorized is accomplished with surprisingly favorable results regardless of fecal contamination or low grade inflammatory tissue reaction.

To the busy surgeon confronted by all sorts and types of abdominal catastrophes, this suggestion will be mightily welcome.

T.M.B.



Demonstrable Genito-Urinary Disease In the Presence of Normal Urinary Findings

W. ELLIOTT (*Minnesota Medicine*, 24:546, July 1941) presents an analysis

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of 300 consecutive cases in which complete urological examination was done. In 234 of these cases, evidence of genito-urinary disease was associated with pathological findings in the urine. In 66 cases the urine was normal by the usual methods of urine analysis, i.e., showed normal specific gravity, absence of albumin, casts and sugar, and absence of white or red blood cells. In 28 of these cases there were disturbances of urination, indicating genito-urinary disease; the completed urological study in these cases showed chronic inflammatory changes at the bladder neck (11

cases); leukoplakia (4 cases); chronic low-grade pyelonephritis (10 cases); urethral caruncle (2 cases); and papilloma of the verumontanum (one case). In the cases of pyelonephritis, the symptoms were sufficiently severe "to make semi-invalids out of the patients;" and the pyelograms showed definite changes in the renal pelvis. While the urine was normal by the routine methods of examination, the infecting agent was finally demonstrated in these cases by cultures of the urinary sediment obtained by high speed centrifugation. In the 38 patients with negative urine who complained of "miscellaneous aches and pains" but not symptoms definitely indicating genito-urinary disease, no evidence of pathological lesions in the genito-urinary tract was found in 8 cases. Seventeen patients showed varying degrees of pyelonephritis and low-grade chronic infection of the bladder; in these cases, as in the cases of pyelonephritis in the previous group, high speed centrifugation and culture finally demonstrated the infecting organism. There were 3 cases of severe prostatic infection, with no symptoms referable to the prostate; and 2 cases of fibrosis of the sphincter in females. The remaining 8 cases in this group are reported in further detail; they include 3 cases of ptosis of the kidney of a sufficient degree to produce symptoms; one case each of hypernephroma, polycystic kidney (unilateral), renal tuberculosis, aberrant blood vessel and infected hydronephrosis. These cases indicate the advantage of a urological examination in cases of "obscure abdominal distress," even if the examination of the urine gives negative results, especially before a major abdominal operation is undertaken.

COMMENT

The main point of this valuable study is that subjective symptoms may long precede urinalytical or objective findings. If persistent, in general, and if augmenting in particular, they are important. Normal function of the entire tract is subconscious. Hence when its activity attracts the attention of the patient investigation is in order. V.C.P.

The Use of Sulfadiazine in Urinary Tract Infections

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R. W. SATTERTHWAITE, J. H. HILL and H. H. YOUNG (*Journal of Urology*, 46:101, July 1941) report the use of the sulfonamide derivative sulfadiazine in the treatment of 104 cases of urinary tract infection, 50 of which were gonococcal; in other cases sulfadiazine was given prophylactically both before and after operations on the urinary tract. In the cases of urinary tract infection in which there had been a recent operation, leaving a granulating surface "somewhere along the urinary tract," sulfadiazine was not as effective as sulfathiazole; in 14 uncomplicated cases of urinary tract infection, all but 3 were cured by treatment with sulfadiazine; this drug was more effective against *Pseudomonas pyocyanea* and *Proteus vulgaris* infections than sulfathiazole. Of the 50 cases of gonorrheal urethritis, 14 are still under treatment, although urethral discharge has ceased; 4 completed treatment, but have not returned for examination. Of the 32 patients who have completed treatment and have been since kept under observation, 86 per cent have negative prostatic secretions and no evidence of recurrence of the infection. In 64 cases given sulfadiazine either pre-operatively or both pre- and post-operatively, only one developed a transitory bacteremia. In all these cases the drug was given by mouth, in doses of 5 to 7 gm. a day; the dosage was such as to maintain a blood level of 12 to 15 mg. per cent; excretion of the drug is slow, one-third being excreted in the acetyl form, which is much more soluble in urine than the acetyl derivatives of sulfathiazole and sulfapyridine. Sulfadiazine may therefore be given patients with impaired renal function "with a wider margin of safety." The toxicity of this drug is slight in comparison with other sulfonamide derivatives. In 155 cases treated, only 14, or 9.6 per cent, showed any toxic reaction; there was no case of severe leukopenia or anemia or of reduction in urinary output. The most common reaction was a mild headache located at the back of the head; 4 patients developed a rash; and 4 had a slight temperature elevation. The therapeutic results in this series, therefore, were obtained "with a minimum of toxic reactions."

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COMMENT

We have come a long way on the road to successful use of the newer antiseptics or bacteriostatics of which sulfanilamide, sulfadiazine, and sulfathiazole are only three examples. Studies, such as this one, are showing the proper choice as to chemical constitution, selective action in definite diseases, relative potencies and toxicities, and finally activity and completeness of elimination. Let the good work go on. Somewhere on the urological horizon moves the star of a really valuable, active and safe preparation for relieving urinary infection. V.C.P.

A New Instrument for Urethrography in the Male

M. L. BRODNY (*Journal of Urology*, 46:350, August 1941) describes a new instrument for urethrography in the male and the technique of its use. This instrument has a clamp shaped to conform to the longitudinal contour of the glans which can be adjusted so as to hold the instrument in place; this prevents the leakage of the opaque medium used and makes it unnecessary for the operator to hold the instrument in place. The author has found that the most satisfactory opaque medium for urethrography is a mixture of 2 parts of iodized oil with 1 part of sterile mineral oil; both oils are heated before mixing. When an oil medium is contraindicated because of local trauma to the urethra, one of the opaque dyes may be used instead. The opaque medium should be introduced into the urethra in "a slow, steady flow;" too rapid injection must be avoided, because liable to cause spasm; too great pressure may cause urethro-venous reflux or extravasation through the urethral wall. Manometric control of the pressure during injection is not necessary; after experience with this instrument, the operator is able to recognize any interference with the flow of the medium, and an immediate roentgenogram should be made to determine whether this is due to organic obstruction or spasm. If the spasm persists, the procedure may be repeated at a later date after the patient has been given a sedative. Two roentgenograms should be made, an antero-posterior and an oblique view, and the instrument is kept in position until the films are developed. The

entire procedure causes but little discomfort to the patient; any sharp pain occurring during the injection of the opaque medium "is a danger signal to stop." In the use of this method in over 100 cases, the author has had "uniformly satisfactory" results, and has observed no untoward reactions. The procedure takes only a few minutes and "is practical for use in a busy clinic."

COMMENT

No one may question the ingenuity of the various and manifold new instruments. It seems to me that a gentle instrumental examination followed by a urethroscopy will satisfy all the usual needs of diagnosis. Urethrography is definitely a rare procedure, hence a special instrument for it at least borders on the unnecessary and the superfluous. Urethrography may be well done if an elastic band is gently snapped about the corona. V.C.P.

A Reconsideration of the Value of Nephropexy

H. J. LINDNER and I. J. GLASSBERG (*New Orleans Medical and Surgical Journal*, 94:78, August 1941) report 10 cases in which nephropexy was done; in all, the chief symptom was dull pain in the lumbar region not relieved by conservative methods of treatment. In all cases roentgenologic examination showed some "anatomic deformity" at the ureteropelvic junction or in the upper ureter; and in 5 cases, hydronephrosis. Two types of operation were employed—a modification of Edebohl's nephropexy and a modification of the technique recently described by Young. In all cases the kidney was denuded of its capsule, thus enabling firm adhesions to form to maintain fixation of the kidney; and any abnormality, such as ureteral kinks, was corrected. Only 3 patients developed any postoperative complication; 7 patients made an uncomplicated recovery. Pain was relieved in all cases; postoperative roentgen studies showed that the "anatomic deformity" has been corrected in every case; cystoscopic examination showed normal conditions in all but one case; in this case the original retention of 25 cc. had been reduced to 10 cc. The authors conclude that in properly selected cases the operation of nephropexy is "indicated, justified and

effective."

COMMENT

The discouraging fact about loose kidney is that it rests on an embryological defect. No matter what operation is done or how well it is done or how dense the primary adhesions, relapse is, after years, very common. In this respect it resembles hernia. All these repair operations do not replace embryological defects for the one simple and absolute reason that they cannot do so. Hence conservative postponement of operation is in many cases a proof of very fine surgical judgment and in the interest of the patient. Very much to this point is a remark to me by the late Robert F. Weir: "It takes more judgment to decide when not to operate than skill to do the operation."

V.C.P.

Papillomata of the Bladder

V. Z. COPE (*British Journal of Urology*, 13:74, June 1941) notes that papillomata of the bladder may be present for some time without causing symptoms. An illustrative case is reported in which some blood was passed per urethram for a day or two; this bleeding ceased spontaneously, but when bleeding, accompanied by frequency of urination, recurred two years later, cystoscopic examination showed the bladder "full of papillomata" that had become malignant. Painless hematuria is the most common and usually the first symptom of papilloma of the bladder. Other symptoms that may occur, and occasionally precede bleeding, are frequency of and pain on urination, retention of urine, or the passage of a piece of tumor; illustrative cases are reported. Tumors causing urinary symptoms originate near the internal urethral orifice. Papillomata of the bladder may be secondary to renal papilloma; a case is reported in which bleeding and fre-

quency of urination developed a year and a half after removal of a kidney for papilloma; the bladder was found to be full of large papillomas. The fact that papilloma of the bladder often undergoes malignant degeneration is recognized, but the need for constant supervision of the patient after removal of benign papilloma is not sufficiently emphasized. One of the author's patients was under supervision for several years, several papillomas being destroyed by diathermy in this period. Six years after the first treatment a partial cystectomy was done; pathological examination showed no carcinoma; a year later, however, biopsy showed beginning malignancy, and the patient's condition became rapidly worse. In this case transplantation of the ureters was done for the relief of pain and frequency, with gratifying result as the patient was able to work in comfort for two years before his death, which was due to metastases in the bones and lungs.

COMMENT

All neoplasms, no matter where situated and no matter whether at first benign, then malignant, or at once malignant, have a short period of either absent or trivial symptoms. Patients will not heed the small signs, such as urgency, tenesmus, blood. Whatever hope the neoplasm has of successful removal lies in getting it out during these quiet days. Inasmuch as the great majority of papillomata of the bladder become malignant early diagnosis and prompt removal are imperative. More than that, regular follow-up is equally essential. After nine years of neglect of regular examination one of my patients appeared with two cancers at the sites of very careful and deep removal. That man had had his day of success but invited his day of failure by disobedience of my advisory protests.

V.C.P.



Desiccated Beef as a Food for Premature and Full Term Infants

H. N. SANFORD and L. K. CAMP-

BELL (*Archives of Pediatrics*, 58:504, August 1941) report the use of desiccated dried beef in the feeding of young infants. The meat used was ground round steak with the fat removed, desiccated at 56° F. in vacuum and pulverized; the iron content of various samples varied from 1 to 0.67 per cent. The addition of desiccated beef to the feeding formula was begun when the infant was from one to three months of age; all infants were under ob-

servation for at least six months, usually for a year. There were 13 premature infants in the group studied; they were placed on the same formula as the normal infants with either the desiccated beef or iron ammonium citrate added, when they reached five pounds in weight. One full term infant "absolutely refused" to take the milk formula containing the desiccated beef; this was the only infant showing "any dislike" for the meat. One full term and 3 premature infants developed diarrhea, and meat was discontinued; but in 2 of these cases meat feedings were resumed later without causing any disturbance. Frequent urine analyses showed entirely normal conditions without the slightest evidence of any kidney disturbance; this is a fact of interest as it has been claimed that very young children cannot tolerate meat proteins. The addition of meat to the usual formula had no effect on the gain in weight of either normal or premature infants. In the full term infants, the addition of the meat had no effect on red cell counts or hemoglobin; although the infants studied lived under poor conditions, there was no evidence of anemia in full term infants on the food formula used, either with or without the addition of meat. In the premature infants, however, the addition of meat to the formula sustained the red cell count and hemoglobin equally as well as the addition of iron ammonium citrate; without iron in some form premature infants almost always become anemic in the first year of life; hence the results show that the desiccated meat is "a satisfactory source of iron for premature infants."

COMMENT

The work of Sanford and Campbell is to be commended—their study is a valuable contribution to infant feeding. It shows a negative value with respect to the use of desiccated beef in early infancy.

I feel that the iron needed in our formulae can be more easily and economically administered through the agency of iron and ammonium citrate. Due to the small amount of iron present in cow's milk, I usually add iron to the formulae of babies fed artificially from birth. This is usually begun at about the third month. In prematures, however, it is important to start iron early in both breast and artificially fed babies.

O.L.S.

MEDICAL TIMES, OCTOBER, 1941

Nutritional Obesity in Children In Private Practice

C. G. KERLEY and E. J. LORENZE (*Journal of Pediatrics*, 19:241, August 1941), in a study of obese children, find that when the obesity is purely nutritional, the children are otherwise normal both physically and mentally. Indolence and mental inferiority in an obese child "strongly suggests" some additional pathogenic factor in the production of the obesity. Children with nutritional obesity all show "habitually insatiable appetites" with a preference for sweet and starchy foods, and a capacity for excessive food intake without resulting illness. In the study of obese children, a thorough physical examination, including blood and urine examinations and blood pressure determination, should be made; bone age assessment is necessary, and a basal metabolism test should be done if possible. When no evidence of any abnormality except the obesity is found, and the history indicates that this is purely nutritional, dietetic treatment only is necessary. The diet employed by the authors includes fruits, fruit juices, lean meat, green vegetables, skim milk; saccharine is used instead of sugar for making cocoa or simple desserts. The total daily caloric value of the diet does not exceed 1200 calories; for older children especially, slight additions may be made from time to time, but such as to keep the caloric value "well under 1500." In a group of 103 children who "conscientiously" followed the diet prescribed, all lost weight, the weight loss being greatest in the older children, ten to sixteen years of age.

COMMENT

It is delightful to read Dr. Kerley's article and to find therein a stimulus to study our obese patients from all angles. In this way, he has shown that, in the vast majority of cases, patience, combined with common sense, sprinkled here and there with a mite of intelligence, will soon put the indiscriminate use of endocrinological substances to rout—too many times we substitute a pill when intelligent regulation of foods will make all concerned happy, and give a job to the tailor or dressmaker.

O.L.S.

The Chemotherapy of Infectious Diarrhea with Sulfathiazole

E. V. ANDERSON (*Journal of Pediatrics*, 18:732, June 1941) reports the use of sulfathiazole in the treatment of infectious diarrhea in children at the Henrietta Eggleston Hospital of Atlanta. Comparison is made with the results obtained in cases of the same type in the ten-year period 1930-39 when sulfathiazole was not employed; in a few cases treated in 1939 sulfanilamide or sulfapyridine was used, but with "disappointing" results. In the 113 cases of infectious diarrhea in children treated in this control period, there were 39 deaths; in the 17 cases treated with sulfathiazole in 1940, there were no deaths. In 11 of the 17 cases sulfathiazole was given when the patient was first admitted to the hospital; in 6 cases the use of the drug was delayed for two to four days until the diagnosis was definitely established. In the first few cases in this series, a twenty-four hour starvation period was enforced, but in most cases this was not found to be necessary, and the patients were placed directly on "a soft, low residue diet suitable for the age." In every case sulfathiazole was given by mouth; the usual daily dose was 1.5 grains per pound of body weight; the average duration of treatment was 4.5 days. Only one child—the last treated—showed any toxic reaction—drug fever and an erythema multiforme-like eruption which subsided promptly when the drug was discontinued. In the cases treated with sulfathiazole, the duration of diarrhea, of fever, and of bloody stools was much shorter than in the control series; the average duration of diarrhea with sulfathiazole treatment was 2.25 days as compared with fourteen days in the controls. The general condition of the patients also showed rapid improvement under chemotherapy, so that the average hospital stay was reduced to 5.8 days; many patients could have been discharged earlier than they were, except that three negative stool cultures were required before permitting discharge. In this series of 17 cases, 9 were proved to be bacillary dysentery by positive stool cultures. Sulfathiazole was also given to 16 children with diarrhea

classified as noninfectious, because of the absence of prolonged, severe toxic symptoms, the absence of pus and blood in the stools, and stool cultures negative for *B. dysenteriae*. In these cases, also, the duration of the diarrhea and the hospital stay were much shortened, as compared with control cases; these results suggest that there "may actually be an infectious basis" for so-called noninfectious diarrheas. While the series of cases reported is "too small for the results to be considered conclusive," the author is convinced that sulfathiazole is a chemotherapeutic agent of definite value in the treatment of the infectious diarrheas of infants and children.

Electrocardiographic Alterations in Rheumatic Fever in Children

E. S. ORGAIN and his associates at Duke Hospital (*American Journal of Diseases of Children*, 62:26, July 1941) report a study of the electrocardiographic changes in 70 children with rheumatic fever; the precordial lead (lead IV) was employed in 44 cases; and serial studies were made in 25 cases. Some electrocardiographic abnormality was found in 49, or 70 per cent of this group of patients. Deformities in the P wave occurred only in patients with the most extensive cardiac involvement; heart block was present in only 6 cases; notching and slurring of the QRS, axis deviation, and changes in the RST segment occurred more frequently; some changes in the T wave were observed in all cases in which any electrocardiographic abnormality was observed, being the only abnormality noted in patients showing no clinical evidence of cardiac involvement. In the 22 patients with congestive heart failure (fatal in 9 instances), and the most extensive myocardial damage, all showed marked abnormalities of the electrocardiogram. Electrocardiographic abnormalities were found in 66 per cent of the patients with murmurs but without cardiac enlargement; and in 33 per cent of those without clinical signs of cardiac involvement. In all but 3 of the patients in whom serial records were made, definite changes were observed, and the records were of value in determining the progress of the disease.

Serum Phosphatase in Infantile Scurvy

H. SWACHMAN (*Journal of Pediatrics*, 19:38, July 1941) determined the serum phosphatase in 18 cases of "unequivocal scurvy" in infants; in all of these cases the phosphatase was abnormally low, the average value being 3.2 Bodansky units, as compared with the normal average of 7.2 units. When vitamin C was given, there was a definite rise in the serum phosphatase in approximately one week in the author's cases. In rickets, which is characterized by overactivity of the osteoblastic tissue, there is an increase in serum phosphatase. In scurvy there is an inactivity

or inability of the osteoblasts to form bone matrix, and this reduced osteoblastic activity results in the diminution of serum phosphatase. As the administration of vitamin C induces morphologic changes in the osteoblastic tissue "in a surprisingly short period," this is reflected in the rapid rise of serum phosphatase under vitamin C therapy. Rickets and scurvy may be present in varying degrees in the same infant; in such cases determination of the serum phosphatase may be of value; if in the presence of acute scurvy the serum phosphatase is normal or above normal, this indicates the presence of rickets or some other complicating condition.



Venereal Disease Control

EXCERPT from Public Health Reports, June 6, 1941. Report of Assistant Surgeon General Vonderlehr on present status of the venereal disease control program in mobilization and national defense:

"Evidence shows that late and latent syphilis now receives more attention in public clinics than is justifiable from a public health standpoint. It is essential that everything possible be done to provide adequate medical treatment for early patients and to discourage the attendance of the others beyond the time when adequate treatment has been given. This idea should also guide the caseholding."

A New Venereal Disease Film

PLAIN facts, the American Social Hygiene Association's new talking motion picture, was recently released for distribution. Sponsored by the Association's Committee on National Defense Activities, the film was designed to fill the need of a motion picture for industrial workers which would tell the facts about syphilis and gonorrhea. However, it is suitable for showing to all community groups.

The first half of the film is devoted to syphilis—its cause, spread, diagnosis, treat-

ment, and cure. The second half tells the story of gonorrhea.

Narrated by Dr. Walter Clarke and produced by the American Social Hygiene Association, Plain Facts is available both in 16mm. and 35mm. sound prints. Health, welfare agencies, and industrial groups may secure copies of the film for review by writing to the American Social Hygiene Association, 1790 Broadway, New York, N. Y.

Hospital for Joint Diseases Internships

THREE to begin July 1, 1942 and three begin January 1, 1943 for two years rotating service in Surgery, Urology, Proctology, Gynecology, Obstetrics (affiliation), Ophthalmology, Otolaryngology, Orthopedic Surgery, Medicine Pediatrics, Neuro-Psychiatry, Dermatology, Pathology, Chemistry, Bacteriology, Radiology, Physical Therapy,

Registration now, by written application, and examination date: Thursday, October 23, 1941, at 9:00 a. m., at the hospital.

The hospital provides maintenance, uniforms, and \$15.00 a month.

The Hospital for Joint Diseases has the approval of the American Medical Associ-

ation for general internships and residencies.

The hospital occupies a block facing Madison Avenue, New York City. It is a modern hospital with a capacity of 355 beds for acute diseases. About 6000 patients are treated annually and one-half of that number are surgical, medical, pediatric, eye, ear, nose and throat patients. All services are active.

The Out-Patient Department treats about 800 patients daily.

The hospital has a country branch with accommodations for 60 patients.

Graduating students and graduates (unmarried men) of Class A medical schools are eligible.

Applications should be addressed to Director, Hospital For Joint Diseases, 1919 Madison Avenue, New York, N. Y.

Public Health Research Institute of New York City, Inc.

THE organizational set-up of the new Public Health Research Institute of New York City, Inc., for which an appropriation of \$100,000 is included in the 1941-42 budget of the Health Department, to be used exclusively for scientific research essential for the protection and the improvement of the health, safety and welfare of the people of New York City, was recently announced.

Following favorable action by the Board of Estimate and the City Council on this item as included in the Executive Budget, the Board of Estimate on June 26th authorized the City to enter into a contract with the Research Institute—a corporate structure which is to be a scientific, non-profit organization, entirely devoted to obtaining for the City the best available biological products and advanced skills and procedures for combating disease and epidemics which occur or may occur here.

A research Council has been set up by the Board headed by Thomas M. Rivers, M. D., Director of the Hospital of the Rockefeller Institute for Medical Research, as *Chairman*. Dr. Rivers also is a member of New York City's Board of Health.

Other prominent medical men and scientists named to the Research Council, are:

Eugene I. Opie, M. D., Professor of Pathology, Cornell University Medical College; Henry Clapp Sherman, Ph. D., Professor of Chemistry, Columbia University; Michael Heidelberger, Ph. D., Associate Professor of Biochemistry of the College of Physicians and Surgeons, Columbia; George Baehr, M. D., Clinical Professor of Medicine of the College of Physicians and Surgeons, who is also physician to Mount Sinai Hospital, Trustee of the New York Academy of Medicine and Chairman of its Public Health Relations Committee, and Ralph S. Muckenfuss, M. D., Director of the Bureau of Laboratories of the Department of Health, member ex-officio.

The contract between the City and the Research Institute was effective July 1st.

Neither members of the Board of Directors nor of the Research Council will receive salaries, the province of the former being to assure sound business management, and of the latter to retain the necessary scientific personnel. The Institute will be housed in the Health Department's Bureau of Laboratories located in the William Hallock Park Laboratory at the foot of East 15th Street, Manhattan.

"Whatever scientific results accrue from the Research Institute, whether they be improvements in developing vaccines, serums or diagnostic methods, or important new discoveries—all will become the property of the City of New York.

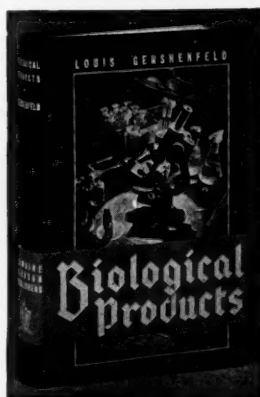
"While a limited amount of research work has been carried forward in the Health Department's Bureau of Laboratories through a corporate structure known as Health Research Fund, Inc., the staff was inadequate and funds, which for the most part had come from voluntary sources, were insufficient to carry forward scientific research necessary for this City of 7,500,000 people. The Research Institute has absorbed the corporate structure of Health Research Fund, Inc., and by terms of the contractual agreement with the City, it may continue to receive and accept grants, gifts, bequests, devises and contributions from private or foundation sources with consent of the Commissioner of Health."

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War Medicine Up-To-Date—Be Prepared

Hurst—MEDICAL DISEASES OF WAR

By Sir Arthur Hurst, M.D., F.R.C.P. Lieutenant-Colonel, late R.A.M.C. Lecturer on Clinical Medicine, Oxford University; Consulting Physician to Guy's Hospital, etc. Second edition (1941), viii+ 427 pages, 47 illustrations, \$5.50.

Here is a timely authoritative book of the utmost practical value and importance to every medical officer already in active service, to those who may yet be called, to members of examining boards, and indeed to all civilian physicians. This is not merely a reprint of the 1940 edition. Every chapter has been revised and brought up-to-date in the light of recent war experience in England and elsewhere, supplemented by reading the latest available British and Continental literature. One hundred pages and ten illustrations have been added.

Colonel Arnold Stott has written a new chapter on meningococcal fever, the prompt recognition and treatment of which are proving important Army problems. In view of the campaign in the Middle East the chapter on amebic dysentery omitted from the 1940 edition has been revised and reintroduced. Col. H. B. F. Dixon has written a chapter on Malaria. Digestive disorders have proved very common in the British Army at home and abroad therefore a chapter on the subject has been added. Dr. T. A. Ross added a postscript to his chapter on Anxiety Neuroses in War before his lamented death. As the *Journal A.M.A.* says: "Because of its preeminently practical and authoritative grasp of the problems of military medicine this volume cannot be too emphatically recommended as compulsory reading for the medical personnel of the examining boards and of the medical officers in active service."

The Military Surgeon says:

"A very timely book which could be studied with profit by both medical officers and civilian physicians."

War Medicine says:

"A manual for a ship's surgeon's five foot shelf or for medical officers at any post this book can be highly recommended."

Psychiatry says:

"It is eminently suited to informing the medical man on the special problems he will encounter as a medical officer with troops engaged in relatively static warfare, and is most commendably practical in fulfilling this mission. It is distinctly the book of the day."

Journal of Medicine says:

"Since recent events have taught us that loss of time spells defeat it would seem imperative to the reviewer that every medical officer should become familiar with Hurst's Medical Diseases of War."

N. Y. State Journal of Medicine says:

"The vast experience of the author and the access he has had to the medical records of the various armies has enabled him to give an excellent work. In bringing this work up-to-date the author and his collaborators have given us a useful and timely treatise on military medicine."

The 27 chapters include: Predisposing Causes of War Neuroses—Hysterical Symptoms in Soldiers—Hysterical Paralysis—Hysterical Contractures—Rheumatism, Sciatica, and Hysterical Postures and Gaits—Hysterical Tremor—Hysterical Fits—Disorders of Speech—Functional Disorders of Hearing—Functional Disorders of Vision—Stupor and Amnesia—Cerebral and Spinal Concussion—Exhaustion resulting in Neurasthenia—Hyperadrenalism and Hyperthyroidism—Anxiety Neuroses of War (By T. A. Ross, F.R.C.P.)—Trench Fever—Typhoid and Paratyphoid Fevers—Dysentery—Epidemic Jaundice—Malaria (By Col. H. B. F. Dixon)—Meningococcal Fever (By Col. A. W. Stott)—Tetanus—Digestive Disorders in Soldiers—War Nephritis—Effort Syndrome—Skin Disease in War (By H. W. Barber, F.R.C.P.)—Gas Poisoning.

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Medical BOOK NEWS

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All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

A Critical Analysis of Body Resistance

Natural Resistance and Clinical Medicine. By David Perla, M.D. and Jessie Marmorston, M.D. Boston, Little, Brown and Company, [c. 1941]. 1344 pages. 8vo. Cloth, \$10.00.

THIS is an encyclopedic treatise bringing together in one volume a critically analytic resume of present day as well as older experimental and clinical data relating to resistance in its broadest meaning to disease eventualities. A quotation of section divisions, all related to resistance, will indicate the scope of this work: Heredity, age, sex, endocrinologic, humoral

and cellular, liver, body surfaces and nervous system, diet, fatigue, alcohol, climate, and a section concerning the clinical aspects of resistance. Many useful suggestions are present throughout the text for the clinician, but this last division surveys more practical details than elsewhere. Particularly so is the chapter on prevention and treatment of shock. For the immunologist and allied worker the work is a gold mine of factual material.

Each chapter ends with a summary following which the bibliography is appended. This latter as well as the index adds greatly to the value of the text.

IRVING M. DERBY

Indemnity Work Practice

Accidental Injuries. The Medico-Legal Aspects of Workmen's Compensation and Public Liability. By Henry H. Kessler, M.D. Second edition. Philadelphia, Lea & Febiger, [c. 1941]. 803 pages, illustrated. 8vo. Cloth, \$10.00.

THIS is the second edition of Dr. Kessler's work—first published in 1931. As announced on the fly leaf, this edition is truthfully enlarged and thoroughly revised, and constitutes a valuable reference book in the consideration of accidental injuries from the standpoint of clinical care in its relation to end results and rehabilitation. According to the author, "Workmen's compensation is now an established institution throughout the world, and the basic principles underlying the evaluation of permanent disability have, since the publication of the first edition, been empha-



Classical Quotations

• Omnis cellula e cellula.
Rudolf Virchow.
Cellularpathologie, 1858.

sized". Following this thesis, the author has introduced discussions and illustrations to assist in the restoration of function in the part involved and in the rehabilitation of the physically handicapped. There is a sensible and serviceable combination of general surgical and orthopedic procedures described in detail, which are frequently found only in separate books. The author should be able to talk with authority. He is an orthopedic surgeon, Medical Director, New Jersey Rehabilitation Clinic, and formerly Medical Advisor, New Jersey Workmen's Compensation Bureau. The concluding chapters are:

Accident Neurosis, Occupational Disease and Rehabilitation of the Physically Handicapped. Each chapter is followed by its pertinent references. Such a book should be readily accessible to all those who are particularly interested in this type of practice and especially to those whose experience is more limited.

JOSEPH RAPHAEL

Latest Revision of Dorland's Dictionary

The American Illustrated Medical Dictionary. A complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. Newman Dorland, M.D. Nineteenth edition. Philadelphia, W. B. Saunders Company, [c. 1941]. 1647 pages, illustrated. 8vo. Cloth, plain, \$7.00. Thumb-indexed, \$7.50.

THIS, the nineteenth edition of a standard work, has been thoroughly revised and enlarged. Its 1647 pages carry 2,000 new definitions and 914 illustrations, including 269 portraits. All departments of medicine and related sciences are covered. This "last word" in lexicography is a handy volume in size and flexibility to have on one's desk or within easy reach.

ARTHUR C. JACOBSON

Communicable Diseases

Plague On Us. By Geddes Smith. New York, The Commonwealth Fund, [c. 1941]. 365 pages, illustrated. 8vo. Cloth, \$3.00.

IN the foreword the author states that his purpose in writing this volume is to set down some facts and theories about communicable diseases which he hopes

will interest other laymen. In the lucid and accurate statement of many interesting epidemiological facts and theories the author has notably succeeded. He enlivens these facts and theories without melodramatics and simplifies them without sacrifice of essential detail.

We share the hope of the author that other laymen will be equally interested, and we feel sure that the book will have great appeal to laymen as well informed, keen and gifted as Mr. Geddes Smith. The style is delightful; it is concise, vigorous and fluent. Format and illustrations are of the same excellence. Annotations ap-

pear on many pages of the text, and each chapter is followed by a short list of important references and by a useful discussion of sources. An index occupies the last 23 pages. The volume forms a noteworthy addition to the Commonwealth Fund publications. As an outstanding addition to the lay literature of the medical sciences it is grade A reading for the medically minded, whether within or without the ranks of the medical profession.

ELLISTON FARRELL

The Itch

Scabies—Civil and Military. Its Prevalence, Prevention and Treatment. By Reuben Friedman, M.D. New York, Froben Press, [c. 1941]. 288 pages, illustrated. 8vo. Cloth, \$3.00.

IN this day and age, when most of the civilized world is at war, or preparing for it, the appearance of an authoritative work on Scabies seems most timely. From time immemorial, this eternal pest of mankind has made life more miserable for the greatest number of people than any other known non-lethal disease. As far back as history records, the Acarus Scabei has been present in every war, in victory or defeat, as the closest of companions. Doctor Friedman has made interesting reading of the history of this pest, its prevalence in the Revolutionary War, and the crudeness of some of the treatments administered, oft times more distressing than the disease, in its attempted cure.

Attention is called to the importance of delousing men and clothing before their discharge from armies after the war has ended lest they take home with them some of their unwelcome companions with which to start the usual civil epidemic.

Many charts and tables elucidate the text concerning the incidence of scabies in civil and military life; and the chapter on treatment is particularly valuable and interesting. Every remedy ever offered for the relief of scabies seems to be included. In many instances accompanied by the most explicit, and often amusing, directions for its application. The newer non-sulphur remedies are thoroughly exploited.

NATHAN THOMAS BEERS

The Abdominal Examination

La Maniobra Ano Parieto—Abdominal en el Estudio de Los Procesos Agudos Del Abdomen. By Dr. Emilio S. Sammartino. Buenos Aires, Dr. Emilio S. Sammartino, Hospital "C Durand." Diaz vellez 5044, [c. 1940]. 110 pages, illustrated. 8vo. Paper.

THIS monograph describes a method of examination of the acute abdomen which is rather novel. The anus parietal abdominal manipulation is not to be confused with the bi-manual abdominal-rectal examination.

The author claims that pain-tenderness and abdominal resistance, which are noted in ordinary abdominal palpation, will disappear or become less after dilation of the anus, if functional, whereas, if the intra-abdominal pathology exists, the tenderness and resistance of the abdominal wall, upon palpation, becomes more prominent and in most cases the tenderness and resistance becomes localized over the affected intra-abdominal pathological condition.

He reports many cases to substantiate his claim, which appear quite sincere, and it is worthwhile trying out, because in the unclassical case, it might be the means to clear the diagnosis.

GAETANO DE YOANNA

Surgery for the Laity

A Surgeon Explains to the Layman. By M. Benmosché, M.D. New York, Simon and Schuster, [c. 1940]. 317 pages, illustrated. 8vo. Cloth, \$3.00.

THIS book is profusely illustrated by easily understood pen and ink drawings. There are 14 chapters as follows: 1.

Why This Book Has Been Written, 2. The Tools of Surgery, 3. The Removal of the Appendix, 4. Operations on the Female Generative Organs, 5. The Removal of Tonsils and Adenoids, 6. Operations on the Gall Bladder, 7. Operations on the Stomach and the Intestines, 8. Hernia, 9. Hemorrhoids, 10. The Surgery of Accidents, 11. Operations on the Kidneys, Bladder, and Prostate Gland, 12. New Growths, 13. Plastic Surgery, 14. The Forbidden Temples: The Brain, Lungs, and Heart.

This gives one a definite idea of the completeness and the scope of the work. Of course it is intended primarily for the layman who is interested in surgical conditions. It is in no way a recitation of the author's personal experiences.

In recent years various daily newspapers and many monthly magazines have printed articles of a medical or surgical nature, which apparently have been intelligently read and enjoyed. Doctor Benmosché has accumulated in one volume practically all of the surgical diseases, and has presented them in a language which the lay reader can readily understand. Those who are interested in things surgical, will find much information in this book.

MERRILL N. FOOTE

A New Neurological Text

A Textbook of Clinical Neurology. By J. M. Nielsen, M.D. New York, Paul B. Hoeber, Inc., [c. 1941]. 672 pages, illustrated. 4to. Cloth, \$6.50.

DR. NIELSEN has produced a textbook of neurology which will prove of value to students of the subject. He has arranged the book so that it does not have the usual introductory chapters on neurophysiology and neuroanatomy. Instead, he has discussed these subjects as necessary in the text itself. There is a complete chapter on cerebral localization in which the correlation between the basic sciences and the clinical is discussed with his inimitable descriptiveness and clearness.

The outline of the book is such that it can be used as a direct teaching guide. The author starts with the diseases of the spinal nerves, then goes on to the radicular syndrome, diseases of the spinal cord, of the cranial nerves, etc., in such a manner that there is a clear unfolding of the field

of clinical neurology. Nevertheless, the book is of no less value to the graduate student of the subject. The index is quite adequate, enabling quick reference to any particular subject that may be under review. The bibliography is especially noteworthy. There has been shown a clear understanding of modern neurology, and of the important recent advances. The graduate student might well test the breadth of his knowledge of any branch of the subject by determining whether or not he is familiar with the references given.

Treatment has been discussed with that attention to details which so many authors take for granted as being already known, to the great loss of the reader. One who has had to cope with the teaching of neurological care to house officers and nurses readily appreciates the attention to details that Dr. Nielsen has shown. He has presented us with up-to-the-minute information on neurological treatment, including the use of the sulfonamides and the vitamins.

One will find occasional errors, or difference from the accepted beliefs. These do not detract at all and undoubtedly will be corrected in later editions. The chapter on the psychoneuroses is perhaps a little too brief.

The book is typographically easy to read, no small blessing in these days of over abundance of literature. This textbook is good and is highly recommended.

WARREN V. HUBER

Military Surgery

Special Surgery in Wartime. "The Practitioner" Booklets. By D. W. C. Northfield, Douglas McAlpine, V. Zachary Cope, and others. London, E. C. 4, Eyre & Spottiswoode, 6 Great New Street, [c. 1940]. 74 pages. 8vo. Cloth, 6s.

THE purpose of this handbook is to emphasize and impress upon those called to treat war injuries, the more frequent and important surgical conditions. Various authors have contributed, and each has made special points of importance peculiar to his subject.

Injuries to the head, spinal cord, abdomen, and chest, and the treatment of burns are described in sections. The appendix deals with prophylaxis with special consideration of the sulfanilamides against gas

gangrene and the streptococcal infections of deep wounds. It is suggested that the initial dose be given at the First Aid Post and that treatment be continued throughout the evacuation period. High voltage X-Ray therapy is stressed for gas gangrene infections in patients who do not tolerate the sulfonamide group of drugs.

The sections on head and spinal cord injuries could very well apply to many of our traffic injuries.

CARL W. LUPO

Food Allergy

Elimination Diets and the Patient's Allergies. A Handbook of Allergy. By Albert H. Rowe, M.D. Philadelphia, Lea & Febiger, [c. 1941]. 264 pages. 8vo. Cloth, \$3.00.

THIS small volume is, according to the author's description, a handbook. It adds nothing to our knowledge of allergic diseases, and omits much of importance which the general practitioner treating allergies should know.

The last one hundred pages are given over to diets of his own designing. Many recipes and daily menus are given in full, both for elimination tests and sustenance diets. The author stresses the importance of a diet which supplies the caloric, mineral, and vitamin needs, while avoiding the foods to which the patient may be sensitive. This has not always been done by those compiling elimination diets. The book can be recommended only as supplementing, from the diabetic angle, a standard work on allergic diseases.

GEORGE ADAMS MERRILL

Röntgenology in Arthritis

X-ray Therapy of Chronic Arthritis (Including the X-ray Diagnosis of the Disease). Preliminary report based on 100 patients treated at Quincy, Illinois. By Karl Goldhamer, M.D. Quincy, Radiologic Review Pub. Co., [c. 1941]. 131 pages, illustrated. 8vo. Cloth, \$2.00.

THE author discusses, in a monograph of one hundred and twenty-nine pages, the subject of chronic arthritis in its manifold forms, dividing it into two main groups—atrophic and hypertrophic.

One hundred cases are reported, all from private practice, and tables are presented analyzing the radiotherapeutic results. An attempt is made by the use of original illustrations to explain the appearance and

pathology of this disease. Since the author is primarily a radiologist, it is rather surprising that there are no radiograms illustrating the various types of arthritis encountered.

No originality for treatment is claimed, but rather an effort is made to encourage the use of the x-ray in recalcitrant arthritic cases. There is no doubt that benefit is derived in many instances (60% are the author's figures) by the use of the ray—a fact well known to all radiotherapists, and it is this message to the general practitioner that the author would convey.

MILTON G. WASCH

Thoracic Surgery

Embolias Casosas Cerebrais em Cirurgia Toraco-Pulmonar. By Joao Martins Castello Branco. Rio de Janeiro, Canton & Reile, Praca Cruz Vermelha, 3-A, [c. 1940]. 119 pages, illustrated. 8vo. Paper.

THIS monograph is concerned with the clinical, experimental and therapeutic study of cerebral emboli in thoracic sur-

gery. The problem is not novel and no addition has been made by the author to a complication with which the average thoracic surgeon is not already familiar. Nevertheless, it is interestingly presented and has a most complete bibliography.

GAETANO DE YOANNA

Vitamin K

Vitamin K. By Hugh R. Butt, M.D., & Albert M. Snell, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 172 pages, illustrated. 8vo. Cloth.

ONE of the greatest advances in medicine, next to chemotherapy, has been the introduction of Vitamin K in certain hemorrhagic disorders. This little volume from the Mayo Clinic summarizes most of the important contributions on this subject. It is worth reading carefully.

ANDREW M. BABEY

BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

Clinical and Experimental Investigations on the General Functions and Their Hormonal Regulation. By Bernhard Zondek. Baltimore, Williams & Wilkins Company, [c. 1941]. 264 pages, illustrated. 8vo. Cloth, \$4.50.

Your Teeth: Their Past, Present, and Probable Future. By Peter J. Brekhus, D.D.S. Minneapolis. University of Minnesota Press, [c. 1941]. 255 pages, illustrated. 8vo. Cloth, \$2.50.

Native African Medicine. With Special Reference to its Practice in the Mano Tribe of Liberia. By George W. Harley, M.D. Cambridge, Harvard University Press, [c. 1941]. 294 pages. 8vo. Cloth, \$3.50.

Abdominal Surgery of Infancy and Childhood. By William E. Ladd, M.D., and Robert E. Gross, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 455 pages, illustrated. 8vo. Cloth, \$10.00.

Clínicas y Critica Quirúrgicas. By Francisco H. Rivero, M.D. Caracas, Avenida San Martin 315, The Author, [c. 1941]. 236 pages, illustrated. 8vo. Paper.

The Complete Weight Reducer. By C. J. Gerling. New York, Harvest House, [c. 1941]. 246 pages. 8vo. Cloth, \$3.00.

Cerebrospinal Fever. By Denis Brinton, D.M. Baltimore, Williams & Wilkins Company, [c. 1941]. 163 pages, illustrated. 8vo. Cloth, \$3.00.

The Second Yearbook of Research and Statistical Methodology. Books and Reviews. Edited by Oscar K. Buros. Highland Park, N. J., The Gryphon Press, [c. 1941]. 383 pages. 4to. Cloth, \$5.00.

Body Mechanics in Health and Disease. By Joel E. Goldthwait, M.D., and Others. Third edition. Philadelphia, J. B. Lippincott Company, [c. 1941]. 316 pages, illustrated. 8vo. Cloth, \$5.00.

Manual of the Diseases of the Eye for Students and General Practitioners. By Charles H. May, M.D. Seventeenth edition. Baltimore, William Wood and Company, [c. 1941]. 519 pages, illustrated. 12mo. Cloth, \$4.00.

Man Without Uniform. By Willy Corsari. New York, Greenberg, [c. 1941]. 358 pages. 8vo. Cloth, \$2.50.

The Therapeutics of Internal Diseases. Edited by George Blumer, M.D. Volume IV, 791 pages; volume V, 765 pages. New York, Appleton-Century Company, [c. 1941]. 4to. Cloth, \$50.00, set of 5 volumes.

Clinical Immunology, Biotherapy and Chemotherapy in the Diagnosis, Prevention and Treatment of Disease. By John A. Kolmer, M.D., and Louis Tuft, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 941 pages, illustrated. 8vo. Cloth, \$10.00.

MISCELLANY

The Machine Age Moves in on Sex

FOR many years mechanical devices and nostrums have been the subjects of United States Post Office fraud orders. During recent years this department of *The Journal* has given little space to what, for want of a better term, are called "sex frauds"—that is, those devices and "cures" promoted solely for the treatment of imaginary or real sexual deficiencies.

Now the Post Office Department has issued a fraud order against a concern which promoted a mechanical device like something out of Dr. Seuss or Rube Goldberg. Under the names Grindley and Company and Matrimonial Body Support Company, Missoula, Mont., one Thomas C. Grindley advertised and sold through the mails a booklet entitled "A Positive Solution to Many of the Problems of Coitus in Married Life." The memorandum of charges served by the Post Office Department on Mr. Grindley alleged that the following pretenses, representations and promises were false and fraudulent: That the booklet correctly advises how to restore "strength, pep, vitality and endurance" to sexually weak men, regardless of age or physical condition; that it advises how effectively to correct "premature ejaculation"; that it correctly advises purchasers how to continue the sexual act with perfect satisfaction for an hour or more and maintain an erection of the male sexual organ during that time; that the booklet correctly advises purchasers how to retard the climax of the sexual act as long as desired "without fatigue," and how to perform the sexual act "as often as desired" and leave the user "fresh as a daisy afterward"; further, that it advises how to prevent "frigidity" in women and furnishes effective information on "birth control."

Examination of the text of the booklet shows that the results mentioned were to be obtained by the construction of a device designed to support the weight of the male

during the act of coitus. This extraordinary construction was to be made by the purchasers of the booklet according to the specifications set forth in the last four pages. According to the fraud order, "it consists of two metal braces, to be placed approximately two feet apart, connected by a metal rod, suspended from which is a heavy canvas or linen upon which the body of the male is to be placed during the act of sexual intercourse. For those who do not wish to make their own support as described in the booklet, the promoter offers to make one and furnish the same for prices ranging from \$3.50 to \$4.00."

Also included in the booklet are the following directions:

HOW TO USE

Be sure that the cross or tie bar marked "O" clears the body of the woman by at least one inch (below the breasts) when the entire weight of the man is upon the support.

Next get into position and adjust the edge of the fabric support so that it is just above the woman's pelvis, and supports the entire abdomen of the man.

Then tilt the fabric support so that the man's weight is barely raised off the woman's abdomen. One adjustment is generally final.

Do not cut down the strength of the materials suggested. The support has to be strongly made. Use 10 ounce canvas or very strong linen, reinforced to make fabric support.

The picture of the human animal endeavoring to propagate the species while at the same time manipulating this combination hoist and viaduct is something that startles the imagination. Expert testimony of government witnesses was nevertheless apparently necessary to show the wide variety of etiologic factors of the various disorders which this device was claimed to correct. It was so obviously a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises that the Solicitor recommended that a fraud order be issued. The Acting Postmaster-General on April 30, 1941 issued Order No. 15486 against Grindley and Company, the Matrimonial Body Support Company and their officers and agents as such.

—J.A.M.A. 117:636 (Aug. 23) 1941.

MEDICAL TIMES, OCTOBER, 1941

EDITORIALS



Longevity Versus Youth

DESPITE the astronomical costs of the defense program, pension panaceists of the Townsend type continue to agitate for increased payments to the aged the spending of which, it is argued, will produce general prosperity.

The American Association for Social Security has denounced such persistent agitation as indicative of brazen irresponsibility and shameless disregard for the welfare of a nation engaged in a vast defense project, and calculated to "bring only disunity, financial chaos and social disaster at this most critical time in the nation's history."

Dublin, as we pointed out in our August issue, seems to regard 1980 as the culminating time for greatly increased political and social influence on the part of the elderly segment of the population, looking to control (?) of the status quo, because of a great increment in numbers and avidity. The aged themselves, it may be assumed, will then occupy more of the key positions in all departments of our government.

Since the present agitation which has so

aroused the resentment of the American Association for Social Security takes little or no account of the defense program, it may well come to pass that the dominance (?) of the future elderly will pro-

foundly affect, in all quarters of the globe, the incidence of war—on the principle that the security and prosperity of the aged comes before imperialism and war. Astronomical costs in the interest of old people may then supersede billions for defense and offense.

Pétain, in France, may perhaps be a symbol, today, of future set-ups everywhere. Meanwhile the rapid decimation of youth proceeds in the air, on the sea, and on battlefields incarnadined as never before. The losses of the puny armies of yesterday were meager indeed by the modern yardstick, and the starving children of glorious Greece alone are numbered on a scale of millions; only the aged, needing little food, creep up relatively on the population gauge.

Our Ill or Senescent Rulers

"AMERICA'S Last King" is an interesting interpretation of the madness

of George III by Dr. Manfred S. Guttmacher (Scribner). The King who lost the American colonies suffered five periods of violent mental derangement in the course of his long reign, his place being finally taken over—forty years after the first attack—by a Prince Regent. At various times the King wore his straight-jacket with the straps untied, under an ordinary coat, so as to be prepared for an anticipated seizure.

Incidentally, Guttmacher points out that the elder Pitt was also a manic-depressive and periodically deranged.

These examples go to show that serious ailments may not lessen the usefulness of statesmen. Pitt was a great man and George III was a good enough monarch when sane. We say *may*, because we do not believe that, as a rule, serious ailments of any kind in our administrators are desirable equipment. This should be a self-evident truth.

Today we see a demand for physical and mental normality, and for youth, incongruously emanating oftentimes from legislators whose own fitness to discharge the duties of their offices is obviously, from the medical standpoint, dubious. And so we witness at times even spectral senescence obscenely directing the destinies of young men, and, indeed, of the citizenry of the country at large.

Free Medical Care

WE have often been touched by the tender solicitude of those foremost in advocating full privileges in the way of medical care for the needy. This solicitude, however, seems not to be deeply concerned over other deprivations of the "underprivileged." Underprivilege appears to be implicitly accepted as a necessary status for vast numbers of our people—save as regards this matter of medical care.

It never seems to occur to these kindly persons, for example, that a little more economic democracy and less monopoly might appreciably increase the power of the underprivileged to purchase medical care—might even change their underprivileged status. Can it be that free medical care is the only thing that can be given without changing such a status, or, dreadful to suggest, would the giving of free medical

care tend to freeze this status into permanency?

The curious attitude alluded to is exemplified in the following editorial which we reproduce herewith from the *New York Times* of September 9, 1941.

For some years the National Medical Association of New Zealand has been waging a pitched battle with the Government on the socialization of medicine. Undeterred by a threatened "strike" of doctors, the Health Minister has now sponsored a bill which has no counterpart in any democratic country and which provides for free medical care. When fees are to be paid, they are fixed. Even if a sick New Zealander wants his own physician he must pay him the low official allowance, with the result that the private practice of medicine is to be virtually abolished. In principle any Government may decide how its medically indigent shall be cared for. It is worth noting that under the dictatorial Bismarck Germany took the first step toward dealing realistically with the wider distribution of medical care. But private practice was not abolished. Nor did we abolish private schools, colleges and universities or try to manage them through Government officials when we embarked on free education.

Though the bill may be modified as the result of the doctors' storm of protest, New Zealand's example should be taken to heart. No sensible person wants to abolish the private practice of medicine in this country, nor is it likely that it will be abolished. But if we are not to go at least part way down the road that New Zealand is evidently bent on following we shall need to have a practical alternative. Organized medicine itself can, and should, provide that alternative by advocating a policy which will recognize the necessity of a sweeping change in the pattern of medical practice, make the hospital the center of every community's medical activities, bring the best that medicine has to offer to the needy, and permit the public to organize its own medical services under competent supervision.

Medicine and Social Culture

IN the view of Professor Levine of Cornell University and the New York Hospital the medical curriculum is deficient in that little or no account is taken of social medicine, concerning itself with family income, housing, clothing, nutrition, and educational and employment conditions.

Medical progress itself as well as a changing society has "led to the inevitable need for revaluation and reorientation of medical education."

The preparation of the student today calls for much more than equipment for the battle against disease; it calls for "the utilization of all measures designed to preserve and promote the health and fitness of all people." Study of the technique of healing is no longer enough.

Such preparation "is either lacking or

—Continued on page 464

Nutrition

AND LONGEVITY

**A Study of the Diets of
One Hundred Octogenarians**

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Atlanta, Georgia

UNTIL comparatively recent times, the subject of geriatrics has been a neglected medical topic. Textbooks and the literature are now giving the problems of old age much deserved attention.

The attainment of longevity is desired by all of us, but more desirable is a comfortable and self-sufficient old age. Therefore, the aging process is a practical medical problem.

Modern medicine has given us an increased life expectancy. In 1930 the expectancy was 65 years. This has been accomplished by control of bacterial disease and by the application of the science of human nutrition.

This saving has been in infant lives as there has been no increase in the number of centenarians. The 1930 census showed 3,984 individuals 100 years old. Of these, 2,647 or two-thirds were Negroes.

Current impressions of laymen and doctors have been too optimistic as to the present-day life span. The real facts are that while more people reach maturity, there has been no real increase beyond the middle age group. In this group the de-

generative diseases make their clinical appearance. They hasten the aging process, reduce efficiency and cut down the individual in his prime.

What, then, are the causes that produce and the factors that prevent aging human tissue? Obviously many principles are involved in longevity. The reasons given by the aged themselves are trivial and irrelevant and even among writers on the subject much wishful thinking and some idle conjecture have been presented.

Obviously the hereditary factor—the native urge of the tissue cell to survive—is a fundamental one, but, as Sherman has been pointing out, the greater part is played by nutrition and by nutrition we mean a newer concept of this term, not the mere status of body weight. It is the intangibles of nutrition that count, that is, the proper chemistry and metabolism of cell life that give resistance to disease, that produce the optimum of body function, and that extend the human life span.

The livestockman and the agriculturist are already getting remarkable results by the scientific application of the newer ideas of foods and feeding. We have not yet been so successful in human nutrition—be-

Read at State Nutrition Committee meeting, April 23, 1941, Atlanta, Georgia.

cause we lack control.

TWO years ago it occurred to me that perhaps something could be learned from the study of the food habits of aged people from 80 to 100. I have studied the dietaries of 100 individuals in the age group. The inquiry was directed as to general nutrition, intake of carbohydrates and protein, the adequacy of minerals and vitamins, and the food habits of the group.

AGE: Seventy-five were in the eighties, seventeen in the nineties, and eight were in the hundreds.

WEIGHT: The average weight of the group was one hundred and thirty-five pounds.

HEREDITY: Twenty-two had one parent who attained 80 years of age, eleven had both parents who reached 80.

TEETH: Seventeen had their own teeth, nineteen had none, sixty-seven used plates.

QUANTITY OF FOOD EATEN: Fourteen were large eaters, twenty-nine small eaters, and fifty-seven average eaters.

CARBOHYDRATE INTAKE: Sixty-two ate all kinds of bread, fifteen ate white bread, ten ate whole wheat, and thirteen ate cornbread.

CEREALS: Eighty-three ate all cereals, including grits and rice. Seventeen ate no cereals at all.

WHITE SUGAR: All the group ate this carbohydrate in the amount of three teaspoonfuls.

MEAT: The majority ate meat once or twice daily. Six ate meat rarely, and three ate none.

VEGETABLES: All the group except two ate all vegetables.

FRUITS: All except six ate fruit.

FLUIDS: They drank from one to eight glasses of water daily.

For illustration I will quote the dietary of the oldest member of the group, a man 106 years old. Incidentally, he is the oldest living man in the State of Georgia. He weighs 140 pounds. His father and mother were respectively 74 and 75 years of age at the time of their deaths. He has his own teeth. He is a small eater. He eats all kinds of bread, cereals, vegetables, and fruits, and he drinks four glasses of milk a day.

WHAT, then, are the conclusions that can be drawn from the dietaries of these octogenarians? They are free from food fads. As a whole their diet is representative of the modern-day diet. It contains adequate protein, carbohydrate and fats. Their diets in calcium and phosphorus are far better than a middle-aged group, because of the amount of milk used. The group is predominantly lighter in weight, averaging one hundred and thirty-five pounds. They retained as many or more teeth than a similar number of the middle-aged group.

In my opinion the real secret of the old age of this group lies in the quality of their foods in the first five decades of their lives. The facts seem to indicate that the quality of food in this country was at its best from 1750 to 1850. There was a good supply of home grown food pleasantly varied. The mechanical and chemical age had not arrived. Machine milling was not introduced into this country until 1870, and the processing of beet sugar was begun by the Germans in the latter part of the eighteenth century, and that of cane sugar at a much later date.

The teeth of our ancestors showed perfect spacing and freedom from decay. That is a contrast to the present generation with faulty dental arches, overcrowded teeth, and rampant dental caries. I mention this because the dental structures have a direct nutritional basis.

The individuals in the group study were born between 1835 and 1860. In those days there was no white flour, white sugar, white rice, and canned goods. They ate the coarsely ground whole grains and the lean meats.

Unquestionably, the finest study in human nutrition appears in the book of Dr. Weston Price, entitled "Nutrition and Physical Degeneration," just off the press. He visited and studied the primitive diets in various parts of the world and compared them in their effects to the modern diet. He proved beyond question the blight of the white man's diet on these primitive people, and his careful studies very conclusively show the effect on the second generation after adoption of the modern-

—Concluded on page 470

DILANTIN THERAPY IN THE TREATMENT OF

Epileptic Convulsions

JAMES L. WINEMILLER, M.D.

Great Neck, N. Y.

A COMPARATIVELY new type of medication has recently made its appearance on the therapeutic field for epileptics in the form of a drug which chemically is sodium 5,5-diphenyl-hydantoinate, but which is better known as dilantin sodium. It is an odorless, white or cream colored powder with a bitter taste, freely soluble in water and slightly soluble in alcohol. It has been used therapeutically during the past several years as an anticonvulsant for the treatment of epileptic convulsions and particularly those not responsive to other medication. The great advantage of this drug lies in the fact that little or no hypnotic effect is obtained even with the largest recommended dosage.

DILANTIN sodium was first subjected to experimental study and clinical evaluation by Merritt and Putnam (1), who found it to be effective in preventing electrically induced convulsive seizures in cats. The drug was relatively nontoxic and well tolerated by the laboratory animals. In order to determine the relative effectiveness of this drug on convulsive disorders in human beings a group of patients was selected who had been having frequent convulsive seizures for many years and who

had obtained little or no benefit from the usually accepted treatments, such as bromides, phenobarbital, ketogenic diets, restricted fluid intake and the like. This group of 142 patients received dilantin sodium for periods of two months to eleven months, the average being a little over four months. Of the 110 patients in this group having grand mal seizures, complete relief of attacks was secured in 68 cases or 58 per cent, and a marked reduction in the number of attacks in 32 other patients or 27 per cent. In 18 cases, or 15 per cent, there was little or no improvement. In 74 cases, with frequent petit mal attacks, complete relief was obtained in 26 cases, or 35 per cent, and a marked reduction in the number of attacks in 36 cases, or 49 per cent. In 12 cases, or 16 per cent, there was either very slight or no improvement whatsoever. The petit mal attacks were best reduced in number in those patients having grand mal attacks also.

A. J. Butter (2), writing in the *British Medical Journal*, March 23, 1940, reported practically the same percentage of complete and partial improvement, in a series of 43 male adults and children, with this drug. Frankel (3), however, in the April 6, 1940 issue of the *Journal of the American Medical Association*, reported a study of 48 epileptic patients of all ages who

Read before the Staff Meeting of Nassau Hospital, May 14, 1941.

were treated with dilantin sodium. His results showed only 39 per cent had complete arrest of attacks, 20 per cent moderate improvement and the rest little or no improvement. These patients had previously been on bromides and phenobarbital for long periods of time and there was considerable reaction despite their gradual withdrawal and substitution with dilantin sodium. However, various other clinicians have published reports of their experience with this drug showing approximately the same result as Merritt and Putnam. The majority of these authors seem to feel that the patient of low grade mentality is less likely to receive benefit and is more likely to exhibit toxicity than those above the average intelligence.

Lawson Wilkins (4), working at the Epileptic Clinic for children at the Harriet Lane Home, has found it feasible to divide his epileptic cases into three groups:

Group 1—Patients with an intelligence quotient above 80 and with no evidence of a neurologic lesion, comprising 43 per cent.

Group 2—Patients with an intelligence quotient below 80 but with no other evidence of a neurologic lesion, 32 per cent.

Group 3—Patients with definite evidence of a neurologic lesion, 24 per cent.

The typical petit mal attack was not encountered in any of the patients diagnosed as having neurologic lesions. Its occurrence is more common among the children with normal mentality. This classification was made before the advent of dilantin sodium and it would be interesting to see just what would be the percentage of complete and partial improvement in cases of epilepsy classified in this manner.

IN the author's private practice he has had the opportunity of closely observing the effect of treatment with dilantin sodium in four cases of epilepsy. All these cases had been previously treated unsuccessfully with the usual sedation.

The first of these cases, a woman, experienced her first attack of grand mal in 1933, the seizures occurring rather infrequently at first, then one attack every 2-3 months for the second year and increasing gradually until in 1938 she would experi-

ence two to three attacks weekly and occasionally several in the same day. There was no evidence of any neurologic lesion. Dilantin sodium therapy was instituted in October, 1938, beginning with 0.3 gm. daily. She experienced a moderately severe attack on the fourth day of treatment and the dosage was increased to 0.4 gm. daily. The patient has remained absolutely free from attacks to the present time, a period of 31 months. No toxic reaction has been noted to date.

The second case was a young man who experienced his first grand mal seizure at the age of 11 years. These attacks occurred nocturnally until 19 years of age when his first attack during the day occurred. They were all severe convulsions and varied in number from one in two months up to several in a day. Dilantin therapy was instituted in December, 1939, 12 years after his first attack, and he has not had a single attack since then, a period of 17 months; no toxic reactions have been manifested.

THE third patient is a young man who has had frequent attacks of petit mal since early childhood and increasingly frequent grand mal seizures since 1935. Placed on dilantin sodium treatment of 0.4 gm. daily in November, 1938, both grand mal and petit mal attacks stopped after several days. At the end of the second week of this mode of therapy a morbilliform rash appeared over his chest and shoulders. The drug was discontinued temporarily but, on the appearance of purpuric areas over his legs two days later, it was decided to stop the administration of the drug permanently after consulting with Parke, Davis & Company, who manufacture the drug. The patient, however, had different ideas on this subject and, unknown to the author, resumed his treatment. Two months later he was still free from grand mal and petit mal attacks and the purpura had not reappeared. He was faithful in taking his capsules for about the better part of a year, during which time he experienced no seizures. About this time he began to cut his dosage and eventually stopped it; soon his attacks returned and he was prevailed upon to resume the dosage of the drug and has

been taking 0.2 gm. daily for the past year, during which time he has had about five grand mal attacks, which is a great reduction in the number of attacks. This patient has recently been seen and he has promised to resume his 0.4 gm. daily.

The fourth case is that of a woman who has had a petit mal for approximately 25 years. She was certain that her allergy to coffee was the cause of the seizures although she would not deny herself the pleasure of an occasional cup of this beverage. She consulted the author in this regard for the first time on May 21, 1940 and was placed upon 0.3 gm. of dilantin sodium daily. These spells have varied from occasional occurrence to several weekly seizures. On August 4, 1940 she apparently had the first and only grand mal seizure that she ever experienced. The attack came when she was sleeping in the cabin of her sailing boat. She attributed this to the fact that she drank some coffee that morning. Dilantin was increased the next day to 0.4 gm. daily and the patient has been free from all such attacks, grand mal or petit mal, ever since.

THE average dosage of dilantin sodium for adults and children over 6 years of age is 0.1 gm., three times daily, before meals. If the patient has been on other medication for long periods of time it is strongly advised to withdraw the former and substitute the dilantin sodium gradually, otherwise the seizures may increase in severity. If necessary an additional 0.1 gm. may be given at bed time. The total adult dose should not exceed 0.6 gm. daily. The initial dosage for children from 4-6 years is 0.1 gm. twice daily; for infants and preschool children 0.03 gm. twice daily. Each dose of dilantin sodium should be followed by at least half a glass of water and in cases showing gastric intolerance the dose may be given with or following meals. In occasional cases the administration of dilute hydrochloric acid, 15 minims before meals, has prevented the gastric symptoms without interfering with the effectiveness of the drug. In special cases, where the attacks are known to occur at certain times, the drug can be so admin-

istered that the greatest concentration is at that time.

In the first of these four cases the patient was told to set her alarm clock for 6 A.M., take her first capsule, and go back to sleep. In that manner she avoided an attack which would frequently occur about 7 A.M.

TOXIC symptoms when they occur are most apt to do so in the second week of treatment, but it might be as early as the first day—or after a period of several months. These occur in one form or another in approximately 15 per cent of the cases. In all cases showing toxic symptoms it is advised to discontinue or reduce the dosage temporarily and in certain severe cases to stop it permanently. The majority of the toxic effects were manifested in the gastro-intestinal system, the central nervous system, the cutaneous system and in the mouth—the gums.

The gastro-intestinal symptoms, such as nausea, vomiting or a heavy feeling in the stomach, are encountered in but a small proportion of the patients. Evidences of the toxic reaction of the drug on the central nervous system can be obtained in practically all patients if the dosage is sufficiently large. These symptoms, according to various investigators, are nervousness, tremor of the hands, ataxia, diplopia with nystagmus and, occasionally, headache or drowsiness. The symptoms disappear after the larger dose is reduced. A toxic dermatitis appears in about 5 per cent of the cases; this is most particularly so in children. This varies from a mild erythema of the neck and arms to a more severe generalized morbilliform rash. Occasionally this may be accompanied by fever, leukocytosis and a moderate eosinophilia. It is suggested that purpura or exfoliative dermatitis should be a signal for an immediate and permanent discontinuance of the drug. However, one of the author's patients, as previously mentioned, had no return of his purpuric lesions after resuming his medication despite orders to the contrary. Hypertrophy of the gums has been noted in a small percentage of cases, chiefly children. This hypertrophy is different from that

seen in scurvy in that it is firm, is not painful, and there is no bleeding. A slight decrease in the ascorbic acid content of the blood serum has been noticed commensurate with the degree of hypertrophy. Whether it would be wise to give vitamin C in conjunction with the drug is an open question.

IN conclusion it can be stated that there has been no report of any permanently toxic or harmful reactions with dilantin sodium, and the author feels that any epileptic, particularly he or she who has proven resistant to other forms of therapy, is entitled to an opportunity for treatment with dilantin sodium.

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- (2) Butter, A. J.: *British Med. Journal*. 1:483:1940.
- (3) Frankel, S. I.: *J.A.M.A.* 114:1320:1940.
- (4) Wilkins, Lawson: *Journal of Pediatrics*. 10:317:1937.

24 WENSLEY DRIVE.



EDITORIALS

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wholly inadequate in present-day medical education."

Professor Levine advocates the establishment of a course in social medicine as one step that "would sow the seed of civic responsibility in the mind of the student, without which he cannot hope to attain his ultimate place as social leader in medical affairs."

We doubt whether even Professor Levine fully realizes all the implications in such a program. Great moral courage will be called for on the part of institutions, teachers, and those who, as social leaders, will attempt to apply fundamental remedies.

The physician really holds the key to the cure of many of our social ills which bear upon physical ailments; but it will

take a more forthright and more humanistic profession to unlock the cure with this key. When he attempts to do this he may expect to be accused of subversion. There is, indeed, danger in Professor Levine's thesis, whether he knows it or not; it is because of this that we speak of moral courage.

Winston Churchill has said that the poor of England are far worse off than the poor in any part of the East (Wilfred Scawen Blunt, *My Diaries*, Vol. II, p. 287). "I would give my life to see them placed on a right footing in regard to their lives and means of living." So declares Churchill. It will be almost worth the lives of future leaders to attempt to change the status quo with respect to some of the implications in Professor Levine's ideas—for the expression of which he is to be greatly commended—as to what the medical curriculum now lacks.

R E S E A R C H

SCOTOMA ASSOCIATED WITH MENSTRUATION

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(Abstract)

A SCOTOMA apparently associated with the menstrual period has been described as present in the subjects studied, and demonstrated by the technique advocated for angioscotometry. Such a defect is wedge-shaped, with its apex at the blind spot, and its base located peripherally. This scotoma showed marked widening two to three days prior to the actual menstrual flow, and then rapidly diminished by the second and third day of the actual flow.

The widened scotoma arising just prior to the menstrual flow corresponds with the maximum capillary permeability and low venous pressure which occurs at the same time.

It is important to note that in all the cases of pregnancy which were studied, this type of change in the scotomata did not occur.

The defect, furthermore, was modified by inhalation of oxygen.

Discussion:

Dr. Samuel R. M. Reynolds, Department

Proceedings of the Research Society of the Long Island College of Medicine, Hoagland Laboratory, April 9, 1941.

of Physiology, Long Island College of Medicine. (Abstract) These results are significant since they offer a simple, objective method of studying a somatic corollary of the menstrual cycle. Reports on such changes in the literature are conflicting. This is especially true with respect to peripheral vascular and fluid changes. Dr. Rosenthal suggests that the increase in angioscotomata is referable to the high premenstrual level of estrogen. There are several possible objections to this: not all authors agree that there is a premenstrual elevation of estrogen; during pregnancy, when estrogen is very high, the scotomata are small; and finally, the scotomata reach a peak and do not diminish until after a fall in blood estrogen, if one accepts the view that there is a premenstrual rise. It is probable that the angioscotomata are related to another change with which they coincide precisely in onset, intensity, and duration, namely, the period of circulatory stasis and vasoconstriction in the spiral arteries of the endometrium. The cause and consequence of this uterine change are unknown. It would be desirable to see if the angioscotomata can be induced by hormones in a hysterectomized woman.

RADIATION DOSAGE TO THE SKIN AND DEEP STRUCTURES INCIDENT TO FLUOROSCOPIC EXAMINATION

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(Abstract)

IT has been shown by numerous workers that small doses of radiation in the neighborhood of 10-15 R when administered to experimental animals are capable of producing mutations which are apparent within a few generations. It has also been shown that the dose need not be administered at any one time, but might be accumulated during the lifetime of the individual with no change in its lethal effect.

It has, therefore, been of interest to determine the amount of exposure to x-ray which is incident to a fluoroscopic examination. By equipping a fluoroscope with an irradiator and an accurate interval timer it has been shown during 1454 observations that the time required for a fluoroscopic examination of the thorax was from one to four minutes, and the dose of radiation from 30 to 120 R. For a gastro-intestinal examination these figures varied from 3 to 8 minutes, and 90 to 240 R, and for a

colon examination from 1½ to 4 minutes, and 45 to 120 R, respectively. These doses are calculated without backscatter and are, therefore, about two-thirds of the amount actually received by the patient. These dosages are very close to the amounts used in treatment of inflammatory and dermatological conditions.

No definite statement can be made at this time as to the actual harm done to the patient by examinations as outlined above. However, the dosages are as large or larger than those which have produced mutations experimentally, and, therefore, promiscuous and prolonged fluoroscopic examinations should be discouraged for the protection of the patient, his progeny, and the examiner.

Discussion:

There was a good deal of discussion without a formal speaker.



FURTHER STUDIES ON THE RELATIONSHIP BETWEEN INTRAMYOCARDIAL AND AORTIC BLOOD PRESSURE

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(Abstract)

THE force of contraction of cardiac muscle may be considered as a function of the intramuscular tension developed in the heart and it does not necessarily parallel measurements of intraventricular or aortic blood pressure. Using the method

which we described previously (*Am. J. Physiol.* 125:234, 1939) of recording the intramyocardial pressure pulse from an imbedded artery segment, we have undertaken experiments to determine the effects of increased and decreased diastolic filling on contraction in the left ventricle.

When the venous return was increased the intramyocardial pressure pulse showed a drop of 4 to 32 mm. Hg. in spite of the fact that there was a simultaneous marked increase in the systolic aortic pressure accompanied by an appreciable increase in aortic pulse pressure. Decreasing the venous return by compression of the inferior vena cava produced effects in the opposite direction.

These results still obtain after section of both vagus nerves. They are not produced reflexly by changes in the aortic pressure as shown by experiments in which this pressure was altered by increasing and decreasing arterial resistance. They are therefore

believed to be due directly to changes in the initial length of the cardiac muscle fibers.

Discussion:

Dr. George H. Roberts, Department of Medicine, the Long Island College of Medicine. (Abstract) Evidence is offered by these experiments to indicate that the peak tension developed in contracting heart muscle does not bear a direct relationship to the total energy available for the performance of work. However, the surface area of the myogram expressing "tension-time" varied directly with those factors which increased the work performance of the heart.



BLOOD SUGAR AND LIVER GLYCOGEN

II. Recovery after single and repeated doses of sulfonamide drugs

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THE effect of single doses, at different time intervals, of various sulfonamide drugs on blood sugar and liver glycogen has already been reported (Greisheimer and Hafkesbring⁵). The purpose of these experiments was to study recovery in blood sugar and liver glycogen after single and repeated doses of sodium sulfapyridine (sodium 2 - para - amino-benzene-sulfonamido pyridine) and sodium sulfathiazole (sodi-

um 2-para-amino-benzene-sulfonamido-thiazol).

Young albino male rats of 100 to 140 grams, on a diet of Purina Dog Chow Checkers, were used.

The control group consisted of 42 rats. These were fasted 15 hours, then 3.5 cc. of a 10 per cent solution of dextrose (per 100 grams of rat) were given by stomach tube. After 3 hours, these rats were killed.

Several series of experiments with drugs were performed. The first series was the

Supported by a grant from the Committee on Therapeutic Research, Council on Pharmacy and Chemistry, American Medical Association.

Table I					
Controls, Glucose, No Drugs		Blood Sugar 93 mg. 100 cc.		Liver Glycogen 1.52%	
Dose	Hours Before Experiment	Sodium Sulfapyridine Blood Sugar	Liver Glycogen	Sodium Sulfathiazole Blood Sugar	Liver Glycogen
1	72	95	1.39	88	1.45
1	48	90	1.39	87	1.66
1	24	102	0.81	86	1.41
4	120,96,72,48	108	0.76	95	1.36

study of recovery after a single dose of sodium sulfapyridine or sodium sulfathiazole. The dose was kept uniform throughout the series—1 cc. of a 7.5 per cent solution per 100 grams of rat was used.

THE results of this study are shown in Table I.

As can be seen in Table I, the average control blood sugar was 93 mg. per 100 cc. and the liver glycogen 1.52 per cent. After a single dose of sodium sulfapyridine, given 72 hours before the experiment, the blood sugar was approximately at the control level, 95 mg. per 100 cc., and the liver glycogen slightly lower, 1.39 per cent. Again after a single dose of sodium sulfapyridine given 48 hours before the experiment, the blood sugar did not change appreciably—90 mg. per 100 cc., and the liver glycogen remained at approximately the control level (1.39 per cent). However, after a single dose of sodium sulfapyridine given 24 hours before the experiment, the blood sugar rose to 102 mg. per 100 cc. and the liver glycogen decreased to 0.81 per cent.

The results after sodium sulfathiazole are also shown in Table I. Allowing 72, 48 or 24 hours for recovery, neither blood sugar nor liver glycogen changed appreciably. Liver glycogen rose slightly after 1 dose with 48 hours for recovery. We have no explanation for this.

The next series of experiments was the study of recovery after 4 doses of either of the drugs—allowing 48 hours for recovery. These results are also shown in Table I. After 4 doses of sodium sulfapyridine 120, 96, 72 and 48 hours before the experiment, blood sugar is increased to 108 mg. per 100 cc. and liver glycogen is decreased to 0.76 per cent—a lower figure than after a

single dose of sodium sulfapyridine with 48 hours for recovery.

When the same series of experiments was carried out using sodium sulfathiazole, blood sugar remained at about the control level, 95 mg. per 100 cc., and the decrease in liver glycogen was slight, from 1.52 per cent to 1.36 per cent.

ON the basis of these results, which show little, if any, change in blood sugar or liver glycogen with single or repeated doses of sodium sulfathiazole, allowing varying times for recovery, we concentrated our study on recovery after sodium sulfapyridine.

The results of this series of experiments are shown in Table II. The first three lines are repeated from Table I. These were placed here to contrast with the effect of giving two doses of sodium sulfapyridine allowing varying times for recovery.

We cannot account for the high value of liver glycogen obtained after 2 doses of sodium sulfapyridine 96 and 72 hours before the experiment. Aside from this, the results show progressively decreasing values for liver glycogen if less and less time is allowed for recovery after two doses—from 1.33 per cent down to 0.59 per cent.

Of particular interest is the group to which two doses were given at 24 and 3 hours before the experiment. The blood sugar is at a high level and the liver glycogen is reduced to a much greater extent than in the series with single doses at either 3 or 24 hours before the experiment.

The same type of result is shown when an extra dose of sodium sulfapyridine was given 3 hours before the experiment to rats which had previously received 4 doses (120, 96, 72 and 48 hours). Here the blood sugar rose tremendously (to 400 or

more), and the liver glycogen dropped far below the level reached when 4 doses had been given (0.25 per cent).

Sulfadiazine (2 sulfanilamido-pyrimidine)*

A GROUP of experiments was carried out to show the effects of sulfadiazine and sodium sulfadiazine on blood sugar and liver glycogen. The results are shown in Table III. It will be noted that after the intraperitoneal injection of 1.8 cc. per 100 grams of rat of a 1 per cent solution of sulfadiazine, the blood sugar rose from a control of 93 mg. per 100 cc. to 117, and the liver glycogen from 1.52 per cent to 1.65 per cent.

Table II			
Dose S.P. 7.5%	Hours before experiment	Blood Sugar	Liver Glycogen
1	72	96	1.39
1	48	90	1.39
1	24	102	0.81
2	96,72	94	1.85
2	96,48	91	1.33
2	72,24	98	1.28
2	48,24	89	0.72
2	24,16	118	0.59
2	24,3	155	0.225
4	120,96,72,48	110	0.73
5	120,96,72,48,3	400	0.25

After the intraperitoneal injection of 1 cc. per 100 grams of rat of a 7.5 per cent solution of sodium sulfadiazine, the blood sugar rose to 99 mg. per 100 cc., and the liver glycogen to 1.86 per cent. When the same amount of a 10 per cent solution was used, the blood sugar rose to 117 mg. and the liver glycogen fell to 1.30 per cent. This drug is similar in its action on blood sugar and liver glycogen to sodium sulfathiazole.

In order to rule out the possibilities that the increase in blood sugar and the effects on liver glycogen might be due to peritoneal distention or irritation, several groups of experiments were carried out using various suspensions (precipitated chalk and powdered starch), distilled water, etc. These results are also shown in Table III. It will be noted that after these various materials, both blood sugar and liver gly-

cogen rose. These results give further proof that the tremendous decrease in liver glycogen obtained after sodium sulfapyridine is an effect of the drug rather than one due to distention or irritation.

Summary and conclusions

THE results of these experiments studying recovery after single and repeated doses of sodium sulfapyridine and sodium sulfathiazole are similar to those obtained after single doses of either of the drugs (Greisheimer³). Sodium sulfathiazole, whether given in single or repeated doses, and allowing various times from 72 to 24 hours for recovery, does not appear to affect blood sugar or liver glycogen to any appreciable extent. Sulfapyridine acts differently. After single or repeated doses, blood sugar remains high and liver glycogen low, 24 hours or longer after the drug has been discontinued.

Liver damage after sodium sulfapyridine has been found by several workers (Antopol et al.¹). On the other hand, Walker et al.¹⁶ report "no gross or microscopic changes which could be attributed to drug (sulfapyridine or sulfathiazole added to diet) were found in the liver of any of the experimental rats." They found important pathological changes in kidneys, ureters, bladder and spleen. McKee,¹⁰ and van Dyke,¹⁵ reporting on the therapeutic and toxicology of sulfathiazole and sulfapyridine find sulfapyridine "clearly more toxic" than sulfathiazole when given in equally effective therapeutic doses. Brown² and Marshall⁹ report high concentrations of sulfapyridine in the liver.

Table III		
Drug	Blood Sugar mg. per 100 cc.	Liver Glycogen (%)
Controls	93	1.52
Sulfadiazine (1%)	117	1.65
Sodium sulfadiazine (7.5%)	99	1.86
Sodium sulfadiazine (10%)	117	1.30
Sulfapyridine (1%) ..	112	2.06
Sodium sulfapyridine (1%)	128	1.73
Precipitated chalk (1%)	130	2.16
Starch (Linit) (1%)..	119	2.04
Distilled water	120	2.70

* Sodium sulfadiazine was furnished by the American Cyanamid Company.

However, microscopic lesions in the liver were found by Long⁸ after sulfathiazole with prolonged use of the drug.

The difference in the action of sulfapyridine and sulfathiazole on liver glycogen in the rat may be explained in part by observations published by Scudi,¹³ and Scudi and Robinson.¹⁴ They found that after sulfapyridine administration in the rat, the excretion of glucuronic acid is increased. They also report that "sulfanilamide does not stimulate glucuronic acid output and sulfathiazole is intermediate between sulfanilamide and sulfapyridine in this respect." Harris⁹ suggested that sulfapyridine is oxidized in the liver to the hydroxy-sulfapyridine and Lipschitz and Bueding⁷ that, after oxidation, it is conjugated in the liver to a soluble hydroxysulfapyridine glucuronate and excreted as such in the urine.

RECENT studies with sulfadiazine appear to prove it less toxic than sulfathiazole or sulfapyridine. Reinbold et al.¹² report that the toxicity of sulfadiazine is at least no greater than that of the other drugs used in the treatment of pneumonia.

Feinstone et al.³, working with rabbits, monkeys and mice, report that sulfadiazine is less toxic than either sulfapyridine or sulfathiazole. They also report less tissue damage after sulfadiazine. Plummer and Ensworth¹¹ report that there was no evidence of liver damage in 12 patients after the administration of sulfadiazine. In reporting 446 cases in which sulfadiazine had been administered, Finland⁴ states that jaundice did not develop in any patient, and in 3 cases with laboratory and clinical evidence of impaired liver damage, two showed improvement and the third remained unchanged.

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NUTRITION AND LONGEVITY

—Concluded from page 460

day diet as evidenced by faulty arches, facial asymmetry and lowered resistance to disease.

I think Dr. Price and other workers have found the real key to the present-day problem confronting the present generation. It lies in the nearly insurmountable handicap of depletion of the quality of the minerals of the soil.

THE practical aspect of the subject lies in the fact that we can apply the knowledge already known of nutrition. While old age may not be attained, we

can protect and make more comfortable and self-sufficient the elderly patient. We can prevent the anemias, the deficiency diseases, the various arthritides so prevalent in old people, the eye changes resting on a nutritional basis; and the resistance of aging tissue to infection can be raised.

The protective foods should be supplied in all the age groups. The oldest group needs minerals and vitamins as vitally as a growing child. We can encourage the use of whole grain in bread and cereal, the wider use of fresh vegetables and fruits, the greater use of dairy products and lean meat, and we can restrict the excessive intake of energy-producing foods.

MEDICAL ARTS BUILDING.

III. BLOOD pH AND THE SULFONAMIDES

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WHEN the sodium salt of the sulfonamide drugs was prepared in order to increase the solubility of these compounds, some workers felt that the accompanying increase in alkalinity would have to be taken into consideration when determining the acute toxicity of these compounds (Long, Haviland and Edwards⁵). If the ingestion of such a highly alkaline substance would affect the acid-base balance of the body and produce an alkalosis of serious proportions it would be reflected in an altered pH of the blood.

This study was begun, therefore, to determine the effect of single doses of the sodium salts of 2-para-amino-benzene-sulfonamido-pyridine (hereafter referred to as sulfapyridine and 2-para-amino-benzene sulfonamido-thiazol (hereafter referred to as sulfathiazole) upon the blood pH. A short time ago a small quantity of 2-sulfanilamido-pyrimidine (sulfadiazine*) was made available and so a small series was run using this preparation.

Method

ALBINO male rats from a standard strain of approximately the same age and weighing between 200 and 230 grams were used. All rats were kept on a standard diet (Purina Dog Chow Checkers) and were under observation for a week before treatment. All animals were fasted for 18

hours before experimentation.

The blood pH was determined electrometrically with a glass electrode and the Beckman potentiometer using the special Behrmann-Fay¹ blood chamber (Figure 1) to insure anaerobic conditions. This chamber, which is fitted to the glass electrode by means of a ground glass collar, has a side arm and a Luer tip which is fitted with a short hypodermic needle. The whole system is filled with a neutral solution of 1.0 per cent oxalate in physiological saline (pH 7.0) and warmed to 38°C.

The blood is drawn by cardiac puncture and introduced into the chamber by gentle suction on the rubber mouthpiece fitted to the side arm. When the chamber is full and the first blood which might have come in contact with air has been drawn up into the tube thus filling the chamber with blood drawn under anaerobic conditions and insuring complete replacement of the oxalate, the side arm is clamped, the needle withdrawn and separated from the tip and the determination is run on this sample in the shielded air chamber at 38°C. Two readings were taken on each sample. Duplicate determinations checked within the error of the instrument (± 0.01 pH). The asymmetry of the electrode was checked before and after each day's series with standard buffer solutions prepared according to Hastings and Sendroy.³

The small volume (0.5 cc.) of the cham-

*Supported by Grant #414 to Dr. Esther M. Greisheimer from the Committee on Therapeutic Research, Council on Pharmacy and Chemistry, American Medical Association.

*Sodium sulfadiazine was furnished by the American Cyanamid Company.

Table I
Effect of Intraperitoneal Injections of the Sodium Salts of Sulfapyridine, Sulfathiazole and Sulfadiazine upon Blood pH in Rats.

Compound	Dose		Control Animals			No. of Rats	Injected Animals		
	cc./100 gms. of rat	No. of Rats	Initial	Average pH 3 hrs. After Drug	Change		Initial	Average pH 3 hrs. After Drug	Change
Sulfapyridine Sodium	10%	5	7.502	7.500	0	18	7.514	7.646	+ .132
Sulfapyridine Sodium	7.5%	4	7.492	7.495	0	23	7.506	7.540	+ .034
Sulfapyridine Sodium	1.0%	2	7.500	7.510	+ .01	5	7.486	7.576	+ .090
Sulfathiazole Sodium	10%	5	7.490	7.500	+ .010	14	7.513	7.585	+ .07
Sulfathiazole Sodium	7.5%	4	7.510	7.500	— .010	24	7.519	7.590	+ .07
Sulfadiazine Sodium	10%	2	7.520	7.520	0	5	7.530	7.560	+ .03
Sulfadiazine Sodium	7.5%	2	7.520	7.520	0	4	7.500	7.550	+ .05
Na ₂ CO ₃	1.8%	2	7.500	7.500	0	8	7.490	7.500	+ .01
Glucose	10%					12	7.495	7.499	0

ber makes it possible to do repeated determinations on small animals, such as the rat, without danger.

ALL rats were under light ether anesthesia, just enough being used to prevent struggling while they were being tied to the operating board. Two determinations were made, one just before and the second three hours after intraperitoneal injection of the drug.

All of the sodium salts of the drugs studied were given by intraperitoneal injection in doses of 1 cc. per 100 grams of rat using various strengths of the drug in aqueous solution; and 1.8 cc. per 100 gms. of rat of the free compounds made up as a 1 per cent suspension in distilled water.

Autopsies were performed on all animals, but histological studies were not made on this series.

Results:

ATOTAL of 188 rats was used in this study. The data dealing with the effects of the sodium salts of the sulfonamides used are summarized in Table I which gives the average pH value for the group studied. It is evident that sodium sulfapyridine exerts a more profound effect upon blood pH than either sodium sulfathiazole or sodium sulfadiazine, and that the latter has the least effect.

In the series receiving 10 per cent of the drug, all of the animals (100 per cent)

that survived showed a rise in blood pH at the end of the three hour interval and the individual range was the greatest being .07 to .23 units (7.57 to 7.74) while of the 25 injected, 7 or 28 per cent died in convulsions and asphyxia during the interval. The animals on 10 per cent sodium sulfathiazole showed a rise in 78 per cent of the individuals surviving, the range being .04 to .11 units (7.54 to 7.62) while 22 per cent showed no change and 6 or 30 per cent of the injected animals died. Though the series on sodium sulfadiazine is small it is interesting to note that the swing toward the alkaline side is the least of the three preparations even though the preparation itself is strongly alkaline (pH 10.2).

The apparent discrepancy in the averages for 7.5 per cent sodium sulfapyridine may be explained on the basis of individual variation for an analysis of the data making up this figure shows that 13 or 56 per cent of the 23 rats injected showed an average rise of .07 units, 6 or 26 per cent showed a slight fall (.03 units) while 4 or 17 per cent showed no change, and 3 died in characteristic convulsions before the experimental 3 hour period had elapsed. The 7.5 per cent sodium sulfathiazole group also showed some individual variation, 20 per cent showing *no change* while 80 per cent showed a rise in the pH.

A solution of sodium carbonate (1.8 per cent having a pH of 10.6 and equivalent

in sodium to the 10 per cent dose of sodium sulfapyridine was injected to determine whether the changes observed were due to the sodium ion introduced. The change is within the sensitivity of the instrument ($\pm .01$ pH) and is insignificant.

A 10 per cent solution of glucose was

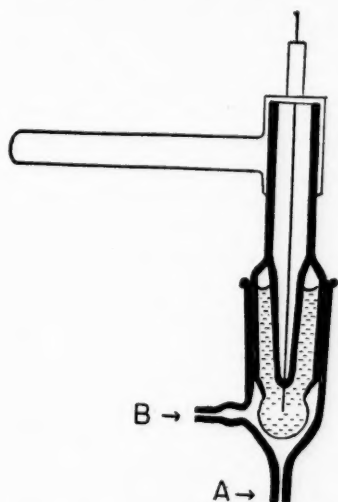


Figure 1

Behrmann-Fay blood chamber for anaerobic pH determinations with the glass electrode.

also injected to see if the introduction of such a hypertonic solution into the peritoneal cavity might affect blood pH through shift in water and salt balance. Again the changes are insignificant.

TABLE II summarizes the effect of single injections of suspensions of the free compounds of these preparations up-

on blood pH. It is evident that in the observation period of 3 hours used in this study the free compounds had no effect upon the blood pH. However, work is being continued using a longer time interval to permit greater absorption to occur.

The increase in reflex excitability and subsequent convulsions after sodium sulfapyridine as contrasted with the extreme muscular weakness and flaccidity of skeletal muscles following sodium sulfathiazole, reported by Lehr et al.,⁴ was noted. Both compounds caused severe respiratory disturbances.

Autopsy showed the presence of drug precipitates in the peritoneal cavity usually on the liver surface; uroliths in the bladder and crystals in ureters and kidney pelves, especially in the case of sodium sulfathiazole. Marked irritation with blood-tinged fluid in the peritoneal cavity was noted with sodium sulfapyridine and hematuria was frequently observed with this drug.

None of these toxic symptoms were noted in the sodium sulfadiazine series though drug precipitate was noted in the peritoneal cavity.

The pH determinations on the compounds themselves used in this series gave pH 11.0 for 10 per cent sodium sulfapyridine; pH 9.61 for 10 per cent sodium sulfathiazole and pH 10.61 for 1.8 per cent sodium carbonate. These values are not corrected for sodium ion concentrations, but agree roughly with those reported by Lehr, Antopol, Churg and Sprinz⁴ and Feinstone, Williams, Wolff, Huntington and Crossley.²

Discussion:

Long and co-workers⁵ pointed out that the high alkalinity of these compounds must be taken into consideration when de-

Table II
Effect of Intraperitoneal Injections of Suspensions of Sulfapyridine,
Sulfathiazole and Sulfadiazine on Blood pH in Rats.

Compound	Dose 1.8cc./100 gms. of rat	No. of Rats	Control Animals Average pH		Change	No. of Rats	Control Animals Average pH		Change
			Initial	3 hrs. after drug			Initial	3 hrs. after drug	
Sulfapyridine ...	1%	2	7.490	7.490	0	5	7.520	7.542	+ .022
Sulfathiazole	1%	2	7.500	7.490	-.01	14	7.494	7.499	0
Sulfadiazine	1%	4	7.517	7.510	0	18	7.531	7.530	0

termining their toxicity. Lehr and co-workers⁴ studying the acute toxicity of these compounds point out that "considerable amounts of acid are necessary for the neutralization of sodium sulfapyridine and sodium sulfathiazole as shown by potentiometric titration and therefore it can be expected that the injection of large amounts of these sodium salts will cause disturbances in the acid-base balance of the body, particularly the administration of sodium sulfapyridine with its high alkalinity." They also find that the administration of this latter compound causes a definite swing to the alkaline side (7.6-7.8) in the blood of rats given intraperitoneal injection of the drug.

We have been able to confirm these findings on the blood pH and to add that while the swing is not as great in the case of sodium sulfathiazole it is as consistent. Sodium sulfadiazine, however, does not give a rise of similar magnitude in the small series here reported but there is a deviation toward the alkaline side. However, this same series of animals did not show the marked respiratory distress observed in sodium sulfapyridine and sodium sulfathiazole nor other signs of toxicity even when given the 10 per cent solution of the drug. Feinstone et al.⁵ give the pH of the 10 per cent solution in physiological saline of this compound as 10.2 and add that it is about the same in aqueous solution. It seems, therefore, that the body

is able to cope with an alkaline solution of this strength if other toxic factors are not present, without exhausting its buffer capacity. Further support is given to this view by the series on sodium carbonate where a strongly alkaline solution (pH 10.6) was handled by the body's acid-base mechanism without exhausting its buffer capacity and permitting a rise in blood pH.

In the case of the free compounds no change in pH was noted and in the dosage used in this series no deaths occurred nor were there evidences of toxicity during the three hour observation period.

Summary

INTRAPERITONEAL injections of the sodium salts of sulfapyridine and sulfathiazole cause a rise in the blood pH which is greatest in the case of sodium sulfapyridine. A slight rise is found with sodium sulfadiazine. The injection of large amounts of these highly alkaline compounds affects the buffer capacity of the body and gives rise to symptoms of alkalosis thus complicating the toxic picture of these compounds.

Injections of suspensions of the free compounds of these drugs did not affect the blood pH under the conditions of this experiment.

Note.—I wish to express my sincere appreciation to Dr. Vivian Behrmann and Kathryn B. Barnes, M.T. for technical advice on the pH determinations and to Dr. Esther M. Greisheimer and Dr. Roberta Hafkes for their assistance in this work.

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The New Orleans Graduate Medical Assembly

THE sixth annual meeting of The New Orleans Graduate Medical Assembly will be held March 2 through March 5;

headquarters at the Roosevelt Hotel. This meeting has grown steadily and in 1941 had a total registration of over one thousand. Further evidence of growth is that all booths have been sold in the past three years.

CONTEMPORARY PROGRESS

The Shortening of Labor with Syntropan

J. E. STOLL
(*American Journal of Obstetrics and Gynecology*, 42:473,

September 1941) reports the use of syntropan during labor. Syntropan is the phosphate salt of the tropic acid ester of 3-diethyl-amino-2, 2-dimethyl propanol; it has an antispasmodic action which is due to both its inhibition of parasympathetic innervation and its direct relaxing action on the muscle cell. It has no narcotic action. It was employed in labor to reduce cervical spasm, which may be a cause of dystocia. In 34 cases (14 primiparas and 20 multiparas), in which syntropan was given by mouth (two tablets of 50 mg. each) when cervical dilatation of several cm. was first noted, the duration of the first stage of labor was shortened to less than a half that observed in 26 control cases not given syntropan. The second stage of labor was not prolonged in any case in which syntropan was given, but was also shortened below the average normal. Thus it is evident that syntropan, "unlike sedatives," does not decrease voluntary or expulsive efforts. In a second larger series of cases (102 cases) in which syntropan was used, a similar shortening of the first stage and of the total duration of labor for



both primiparae and multiparae was obtained. No deleterious effect on the child was observed; in the last series of 102 cases, the condi-

tion of the infant immediately after delivery was "good" in 97 cases, and "fair" in 3 cases; there was only one stillbirth and one case of cyanosis. The average birth weight of the infants in this series was 7 $\frac{1}{4}$ lbs., "well within the normal range;" hence the weight of the infant was not a factor that might have influenced the duration of labor.

COMMENT

Modern obstetrics requires some form of analgesia and/or amnesia. Coincident with the use of drugs to produce analgesia, labor is prolonged in varying degrees, depending on many factors. Up to now we have possessed no safe remedy to "hurry up" the labor when slowed by analgesia. Recently, however, there has come into the market a very powerful therapeutic agent—syntropan—that will apparently shorten very materially the first stage of labor; it does not prolong the second stage and has no effect on the child. What a "boon to the old men doing obstetrics!" We have had no experience with syntropan but it sounds "too good to be true" and we certainly intend to give it a trial.

H.B.M.

A Study of the Bacteriology of the Cervix During Pregnancy and Its Relation to Puerperal Morbidity

E. A. CONTI and his associates at the Pittsburgh Hospital (*Surgery, Gynecology and Obstetrics*, 73:767, September 1941) report a study of the bacteriology of the cervix during pregnancy in relation to puerperal morbidity in 275 cases. Patients were considered to show puerperal morbidity if the temperature reached 100.4° F. on any two successive days of the puerperium after the first day postpartum. On this basis, 29 patients, 10.5 per cent, showed puerperal morbidity; if cases are excluded in which this was definitely due to extragenital causes, the morbidity was 8 per cent. Streptococci were cultured from the cervix during pregnancy in 40 cases, 14.5 per cent, but the streptococci were of the hemolytic type in only 9 cases. The morbidity was somewhat higher in the group showing streptococci in the cervical cultures—17.5 per cent—than in the series as a whole; of the 9 patients with hemolytic streptococci in the cervical cultures, 3 or 33.3 per cent showed puerperal morbidity. From their study of these cases the authors conclude that while endogenous infection from the cervix does occur following labor, in their series it was "exceedingly mild and of short duration." Their findings indicate also that erosion and mild chronic nonspecific cervicitis did not increase the incidence of puerperal morbidity.

COMMENT

Up to date bacteriologic study of the cervix

during pregnancy has not been given the importance it deserves. In the management, certainly accuracy in the identification of the causative bacteria in puerperal sepsis is most important. The author has shown this can be done before labor begins. We have had some experience along this line and cannot agree with the statement that "while endogenous infection from the cervix does occur following labor it is usually mild and of short duration." We have seen several severe cases of puerperal sepsis with one death from endogenous infection. We can agree, however, that erosions and mild chronic non-specific endocervicitis do not apparently increase puerperal morbidity. Vaginal instillations of any good germicide will reduce the chances of morbidity from endogenous cervical foci. Try it.

H.B.M.

Morbidity Following Vaginal Examinations During Labor

H. W. ERVING and E. F. MEISTER (*American Journal of Obstetrics*, 42:326, August 1941) present a study of 1000 consecutive deliveries "on the maternity floor" of the Millard Fillmore Hospital of Buffalo, N. Y.

There were no maternal deaths in this series and the corrected fetal mortality was 2.7 per cent; 75 per cent of the deliveries were operative, chiefly low forceps; version and extraction were done in 12.4 per cent and cesarean section in 6.1 per cent. Vaginal examinations alone or vaginal and rectal examinations were done in 97.5 per cent of the cases. In considering maternal morbidity, two "febrile zones" are distinguished, according to Ziegler's classification. Zone 1: A temperature of 99.2 to 100.2° F. in any two consecutive twenty-four-hour periods excluding the first twen-

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ty-four hours after delivery. Zone 2: A temperature of 100.4° F. and over for any two consecutive twenty-four-hour periods, excluding the first twenty-four hours after delivery. In this series of 1000 cases, the morbidity was 22.6 per cent for the first zone and 4.5 per cent for the second zone; excluding the cesarean sections, the morbidity was 21.6 per cent for the first and 2.8 per cent for the second zone; 1.6 per cent of patients remained in the hospital for fourteen days or over and half of these were afebrile. Vaginal instillations were employed in 7 per cent of patients, but the morbidity in both the first and the second zones was higher in this group (30 and 5.7 per cent) than in the series as a whole. The authors conclude that "vaginal examinations during labor when done carefully and not too often, are safe," and they consider this type of examination "the procedure of choice." Vaginal instillations during labor and following vaginal examination, however, are not essential to safe obstetrics and may rather be regarded as "meddlesome interference."

COMMENT

During the past 5 years "all hands have been turned" towards the reduction of maternal morbidity and mortality and the results are gratifying. All figures for morbidity have been lowered by from 50 to 100 per cent. We agree entirely with the idea that vaginal examinations can be made with safety during labor provided rigid asepsis is observed. In fact, we would go further and say that vaginal examination must be made when labor is not progressing in a satisfactory manner. We have no patience with the physician who deprecates vaginal examination during labor under any and all circumstances. We cannot agree with the authors' statement that the instillation of a vaginal antiseptic during labor constitutes "meddlesome interference". We have used the mercurochrome technic of Mayes at the Methodist Hospital of Brooklyn in 30,000 labor cases with a reduction of maternal morbidity by 100 per cent. We are convinced that vaginal antiseptics — any method you choose—is the most valuable modern adjunct in the prevention of maternal morbidity and mortality.

H.B.M.

Fetal Mortality in Post-Maturity

S. G. CLAYTON (*Journal of Obstetrics and Gynaecology of the British Empire*,

48:450, August 1941) in a review of 9649 deliveries found that 455 infants were post-mature, in that there was definite evidence that pregnancy had continued for over forty-two weeks and the infant's weight was over 7½ pounds. In this group the percentage of stillbirths was definitely higher than in infants born at term.

There were, however, only 2 neonatal deaths in this series indicating that the post-mature infants born alive is "strong and healthy." A study of the placenta was made in cases in which the patient was delivered after the forty-second week, and in cases of delivery after the forty-second week in which the infant weighed more than 8 lbs. Only a slightly higher percentage of these two groups (21 and 19 per cent respectively) showed heavier calcification than was found in placentas from deliveries at term (16 per cent). In the placentas of post-maturity cases examined microscopically no extensive degenerative changes were found. In all but 2 of the cases of stillbirth in post-maturity cases, some cause of the fetal mortality other than the post-maturity was found. Death was due to congenital abnormalities in 4 cases (13 per cent); and disproportion and malpresentation and primary uterine inertia accounted for 60 per cent of the fetal deaths. Primary uterine inertia occurred 38 times in the 455 cases of prolonged gestation, an incidence of 8.4 per cent, which is definitely higher than that observed in all deliveries at the Hospital in 1936-38 (3.7 per cent). This increased inertia was not related to induction of labor, as labor was induced by surgical methods in 3 cases, and by medical methods in another 3 cases. Uterine inertia in post-maturity is attributed in part to the fact that "the large and rigid head of the post-mature fetus" does not descend easily or rotate normally so that "the normal stimulus of a well-flexed and engaged head on the lower segment is lacking." The author suggests also that "it may be that the uterus which is slow to start work is sluggish in action." He is of the opinion that induction of labor is not indicated in cases thought to be post-mature in which there is no evidence of disproportion.

COMMENT

Fetal mortality in post-maturity has always been an important obstetrical problem. There have been many conflicting statements but the author in this paper deals with the subject in a very fair manner. We have always believed that post-maturity was a very uncertain term and have practiced, as well as taught, that interference only because of post-maturity constitutes "meddlesome obstetrics." An old midwife, early in my obstetrical career, said to me "let 'em alone; when the fruit is ripe, she fall." Crude but packed with truth! Generally speaking, forget the overdue story and handle the case according to indications when labor finally begins and you'll have less trouble than trying to "force labor."

H.B.M.

The Incidence of Hypertension After The Toxemias of Pregnancy

T. J. WILLIAMS, H. G. NIX and C. H. MAUZY (*American Journal of Obstetrics and Gynecology*, 42:98, July 1941) report a follow-up study of patients in whom a diagnosis of toxemia of pregnancy had been made at the University of Virginia Hospital in twelve years ending December 1936. There were 566 such cases recorded, in 136 of which eclamptic convulsions had occurred; 28 of these patients died in the hospital from the toxemia; most of these deaths (19) occurred in the eclamptic cases. Seven patients had died since discharge from the hospital; 224 patients were followed up and reexamined repeatedly. Of these 120, or 53.5 per cent, had normal blood pressure and 104, or 46.5 per cent, developed hypertension. The incidence of hypertension was influenced chiefly by the age of the patient at the time of the toxemic pregnancy; in patients less than twenty years of age at that time, the incidence of hypertension was 19.4 per cent; in patients thirty-five years of age or more, the incidence was 80 per cent. The incidence of hypertension was also higher in multiparae than in primiparae, but the parity was so closely related to the age factor that these two could not be distinguished. With exception of chronic nephritis and essential hypertension (occurring in only a small group), the severity and type of the toxemia and the height of the systolic and diastolic pressures at the time of the toxemia had no demonstrable

effect on the incidence of subsequent hypertension. The occurrence of pregnancy subsequent to the toxemic pregnancy definitely influenced the incidence of hypertension, which was approximately twice as high in patients whose first pregnancy was toxemic and who had subsequent pregnancies than in primiparae who had no subsequent pregnancies; this was true without regard to the age of the patient at the time of her first pregnancy; 54 per cent of the women who had subsequent pregnancies developed toxemia during the later pregnancies. The authors conclude that it is impossible to determine with certainty whether permanent hypertension will develop after a toxemic pregnancy; the "chances" are much greater in older women; if hypertension develops and persists, "additional pregnancies should be undertaken with considerable reluctance and with a very careful prenatal regimen."

COMMENT

Such studies as these are of significant importance, particularly as regards prognosis in subsequent pregnancies and life expectancy. While we cannot always tell which toxic patient will develop a permanent hypertension, nevertheless, the patient gets more and better postpartum attention. She is watched closer and future pregnancies are better planned. It is to be expected, as the authors found, that the younger the patient the better (usually) the prognosis; the older the patient the graver the outlook. Another reason why the hazards of pregnancy and labor are greater in older patients, particularly after 35: we believe the elderly gravida does not get as good care in comparison to her added hazards as her younger, more vigorous sisters. We all should give our elderly pregnant patients more and better prenatal care.

H.B.M.



The Results of 500 Cases of Wertheim's Operation for Carcinoma of the Cervix

V. BONNEY (*Journal of Obstetrics and Gynaecology of the British Empire*,

48:421, August 1941) reports that up to April 15, 1936 he had performed Wertheim's operation in 500 cases of carcinoma of the cervix, which are now reviewed on the basis of five years' freedom from recurrence; in 415 cases the operation was done on or before April 15, 1931, making these cases available for a ten years' review. The cases are divided into two groups according to whether the glands removed at operation were or were not carcinomatous. Even the "gland-free" group includes a number of cases that would be classed by those employing radium therapy as stage 3 or inoperable; the "gland-involved" group naturally includes a higher percentage of such cases. Most of the patients in this series were between thirty-five and sixty years of age; there were 30 patients between sixty and seventy, 6 over seventy, 34 between thirty and thirty-five and 10 under thirty. The growth was a pure columnar-celled adenocarcinoma in only 17 cases; in the others it was squamous celled, although in some instances there was a tendency to columnar formation. In the series of 500 cases, there were 70 operative deaths; the highest number of deaths occurred in the first 100 cases; the gradual reduction in mortality is to be attributed partly to increased operative skill and partly to the introduction of methods to combat sepsis and shock. Deaths were due chiefly to "traumatic" shock (24), "hemorrhagic" shock (6) and "toxic" shock (13); there were 3 deaths due to pulmonary embolism. Of the surviving patients, only 14 could not be followed up for five years; 201 were living and well five years after operation; 193 developed recurrence before five years; 22 died of other diseases before five years; in 4 of these death was due to conditions that may be considered late sequelae of the operation. The five-year cure rate for the whole series of 500 cases is 40 per cent; if the patients lost sight of and those dying from other diseases are excluded, the rate is 43 per cent. In these 500 cases, the regional glands removed were free from carcinoma in 300 instances; of these 30 died postoperatively and 159 were living and well five years after operation (53 per cent); in the 200 cases with carcinomatous

glands, 40 died postoperatively and only 42 were free from recurrence after five years (22 per cent). Of the 415 cases operated on before April 15, 1931, 57 died postoperatively, 131 were living and free from recurrence ten years after operation; 178 had recurrences within ten years; 28 were lost sight of and 21 died of other diseases within ten years. This gives a ten-year cure rate of 31 per cent, and these may be regarded as absolute cures. The ten-year cure rate for cases in which the regional glands were involved at the time of operation is 16 per cent. (28 cures in 171 cases); but in those cases in which the glands were not carcinomatous, the ten-year cure rate is 42 per cent (103 cures in 244 cases). On the basis of these results the author is of the opinion that the Wertheim operation should not be abandoned in favor of radium therapy in the treatment of cervical carcinoma, especially since it does prevent recurrence in some cases with definitely carcinomatous glands.



COMMENT

There is no surgeon in the world who deserves more credit for sticking to an idea than Victor Bonney. He has persistently, even in the face of adverse criticism, performed the Wertheim operation for cancer of the cervix. Constant study of and improvement in the technic of this operation have brought him results that are today unequaled. Yet he is not unmindful of the fact that irradiation produces excellent results when properly employed. Dr. Bonney's 5 year cure of 40 per cent of 500 cases treated entirely by the Wertheim operation is as good or better than any series treated by irradiation plus operation or irradiation alone. His 10 year cure of 31 per cent is certainly outstanding. On the other hand let us not forget that there is only one Victor Bonney and that being the case the vast majority of us "mere mortals" must resort to both operation and irradiation for the cure of cancer. Today this is the routine method of treatment for the "rank and file" of our cancer specialists—and by the way, no surgeon has the right to treat cancer unless he has "majored" or specialized in cancer work. For the general practitioner (and specialist too) early diagnosis is the keystone of success in cancer. Be "cancer conscious" and you will discover more early cancers.
H.B.M.

Diagnostic Value of Vaginal Smears in Carcinoma of the Uterus

G. N. PAPANICOLAOU and G. F. TRAUT (*American Journal of Obstetrics and Gynecology*, 42:193, August 1941) report a study of vaginal smears in carcinoma of both the uterine cervix and fundus. The material for the smear is obtained from the posterior fornix of the vagina by means of a curved glass pipette equipped with a rubber bulb for producing suction. The smears are stained by methods previously described by one of the authors (G.N.P.). In cases of cervical cancer, the abnormal cells found in the vaginal smear show great variety of size and form and differ distinctly from the normal cell types of the vaginal secretion. The nuclei of these abnormal cells are atypical in form and structure, often very large, showing "conspicuous granules" or one or more small nucleoli; some nuclei are in a stage resembling the prophase of mitotic division although actual mitotic figures are rarely found. These nuclei stain very deeply. Small pyknotic nuclei may also be seen. The cytoplasm of these cells also shows abnormal changes; vacuolization is characteristic; the cytoplasm is dense and hyperchromatic. Various deformed cell types are present—elongated, spindle-shaped and tadpole-like. These deformed types are seen in late rather than early stages of carcinoma, however. Blood elements are "quite conspicuous" in the vaginal smears in cervical cancer, especially erythrocytes, many of which show degenerative changes. Histiocytes are also invariably present and are highly phagocytic; they show marked variation in size. In the vaginal smears in cases of carcinoma of the fundus, the abnormal cells show less variation, and are smaller in size. The typical cell types in fundal carcinoma smears are cuboidal, columnar or spindle-like, staining darkly, and occurring singly or in clusters; vacuolization is common; the nuclei of these cells show variation in size with dark-staining granules. The blood cells and histiocytes in the smears are similar to those in the smears in carcinoma of the cervix. During the past two years the authors have studied "many hundreds" of vaginal smears from normal

women and from those having various gynecological diseases. In cases of carcinoma, the diagnosis by vaginal smear has been found to be correct in "a high percentage" of cases when checked by tissue biopsies. The method is simple; the necessary procedure for obtaining vaginal smears can be easily and quickly carried out with little inconvenience to the patient; and, therefore, it can be applied to large groups of women. The use of the method, the authors believe, may facilitate the early diagnosis of uterine cancer if carried out on a large scale. For its successful use cytologists must be instructed and trained in the interpretation of the smears.

COMMENT

In the early diagnosis of cancer lies our only hope of cure. Local cancer can be eradicated by modern methods of treatment; metastatic cancer cannot. Therefore, any method that gives even the slightest clue to early diagnosis is of real value. We have had no personal experience with the technic as practiced by the authors but we feel we should begin its employment—and so should every physician who handles female patients. Until some reliable research worker or group of workers discovers the actual cause of cancer it behooves every physician, clinician or pathologist to be constantly on the lookout for cancer. Let us all become "cancer conscious" and thereby help to reduce the mortality of cancer.

H.B.M.

Menorrhagia as a Primary Factor in Various Blood Dyscrasias

C. L. BUXTON (*American Journal of Obstetrics and Gynecology*, 42:502, Sept. 1941) notes that gynecologic symptoms of recognized systemic diseases are not uncommon; less frequently the presenting symptom is "so characteristically gynecologic in type" that the underlying systemic disease can be discovered only after extensive study or is revealed by an exacerbation of some general symptom. The various blood dyscrasias usually have characteristic symptoms that indicate the correct diagnosis, but occasionally menorrhagia may be the initial and for some time the only symptom. In a review of 108 cases of purpura hemorrhagica, aplastic anemia and leukemia collected from the records of the Presbyterian Hospital, New York, menorrhagia was the initial symptom in 10 cases; and 7 of these

patients were first treated for this gynecologic symptom. Local treatment was carried out in 3 cases, including hysterectomy in one; and the other 4 were given various types of medical treatment including gonadotropic hormone; transfusions were given in 2 cases. At various periods subsequent to this treatment, other symptoms characteristic of the blood dyscrasia developed. Although it is true that the total number of cases of uterine bleeding due to blood dyscrasias must be "relatively small," the author suggests that complete blood studies should be made "in every unexplained case of menorrhagia."

COMMENT

"Gynecologic symptoms of systemic disease are by no means uncommon," says the author and to this we agree 100 per cent. How often do we find menstrual disturbances caused by the various blood dyscrasias? Too often in consultation practice, and for the very simple reason that the average practitioner, including some specialists, forgets to study the patient as a human entity. It's a weakness we all "fall for" at one time or another, because it's so much easier to blame a local lesion or, finding none, to accuse the endocrine system. Certainly in any case of abnormal vaginal bleeding, the cause of which is obscure, the blood system should be investigated for the possible cause.

Remember! never begin operative or irradiation treatment in such cases until the blood dyscrasias have been ruled out. You'll save your reputation and perhaps a lawsuit.

H.B.M.

Uterine Prolapse; An X-Ray Study

F. L. SCHWARTZ (*American Journal of Surgery*, 53:111, July 1941) has found that in the less marked degrees of uterine prolapse it is sometimes difficult to determine whether the prolapse is the cause of the symptoms of which the patient complains. The best test is to determine the degree of relief afforded by support of the uterus. In some cases, however, especially when litigation or compensation is involved, the patient's statements as to her symptoms cannot be fully relied on, and it is often difficult for the gynecologist to decide how far the relaxation of the ligaments supporting the uterus is responsible for the symptoms. Some sort of "yardstick" for the measurement of abnormal mobility of the uterus is desirable. The author has made an x-ray study of uterine mobility on

25 private patients, none of whom were involved in litigation or had any reason for making misstatements in regard to symptoms or their relief. In all but 3 of these patients hysterosalpingography was done on definite indications; in the other 3 patients films were made in the same way, without injection of the opaque medium, the shadows of the instruments employed being sufficient for adequate measurement of the excursions of the uterus. In hysterosalpingography by this method, after the desired number of films have been obtained, the speculum is removed from the vagina, leaving the cervical tenaculum and cannula *in situ*. The uterus is then pulled as far downward as possible, and another film taken. From these two films the measurements were taken showing the upper and lower limits of motion above the symphysis and thus the mobility of the uterus in centimeters. For this work the author has used the Hyams cannula and a special cervical tenaculum devised by himself and previously described. In 11 of the 25 cases studied, the patients manifested pressure symptoms due to prolapse, as was shown by the fact that these symptoms were relieved by support. In these cases the low point above the symphysis varied from -5 to plus 3.3 cm., averaging 1.2 cm.; and the uterine motion varied from 3.8 to 8.5 cm., averaging 5 cm. In the group without pressure symptoms, the low point above the symphysis varied from 3.8 to 8.5 cm., averaging 5.5 cm.; the motion of the uterus varied from 1.8 to 3.5 cm., averaging 2.6 cm. Although certain modifications in this technique may be necessary, these figures indicate that it supplies "a simple and accurate objective method of determining the existence and extent of abnormal uterine relaxation."

COMMENT

The study of almost everything else in medicine has been undertaken by the use of the x-ray and now we have uterine prolapse. Such a technic had never occurred to us but it "sounds good" and with experience one should really obtain some valuable data—particularly, as the author has suggested, in litigation or compensation cases. "Time marches on" and we are all for "taking to" anything that is of diagnostic value. Try it: we intend too.

H.B.M.



Effect of Silver Preparations and Antiseptics on the pH of Nasal Secretions in Situ

In previous experiments, N. D. FABRICANT (*Archives of Otolaryngology*, 34: 302, August 1941) has found that the pH of the nasal secretions is important in acute rhinitis and rhinosinusitis; normally the pH of the nasal secretions is on the acid side, between 5.5 and 6.5, and this degree of acidity is unfavorable to the development of micro-organisms, while alkalinity favors the development and extension of infection. In considering the use of local applications in the nose, it is important, therefore, that drugs employed should be slightly acid and aid in maintaining the acidity of the nasal secretions, as well as have no undesirable effect on ciliary activity. Using the methods employed in his previous experiments, the author has studied seven silver preparations and four antiseptic solutions that have been employed in nasal therapy. Of the silver solutions studied, only one, colloidal silver bromide (argental) has a pH below the range of the normal nasal secretions in situ, and thus when applied intranasally tends to lower the pH of the nasal secretions. But applications that increase the pH of the secretions toward the alkaline side "prolong an undesirable status" in rhinitis and rhinosinusitis—"an alkaline status in which the bacteria that produce the acute inflammation find a fertile field for growth"; and therefore the author suggests that in such conditions only silver preparations standardized to a pH level between 5.5 and 6.5 be employed for local application. Of the antiseptic solutions studied metaphen, merthiolate and mercurochrome were found to be definitely alkaline, and this is perhaps one of the reasons why they have

been found ineffective in the treatment of acute rhinitis. Mecsresin diluted 1:5 has a suitable pH for nasal application, according to the author's standards. Further study may indicate a relationship between the pH of various drugs used intranasally and "the ciliary factor."

COMMENT

Other current articles by this author give data regarding the pH of various anesthetics and of various vasoconstrictors commonly used in the nose and their effects on the pH of the nasal secretions. It is to be hoped that he will soon report upon the effect of the sulfonamide drugs as articles are appearing regarding their intranasal usage. This work and that of others along the same lines are bringing us another step along the way of progress.

L.C.M.

The Local Use of Sulfonamide Compounds in Acute Respiratory Infections

J. M. SCHMIDT (*Brooklyn Hospital Journal*, 3:148, July 1941) reports the treatment of acute rhinitis and other acute respiratory infections with local application of sulfonamide compounds. In acute rhinitis, neoprontosil was first applied as a local spray in the nose, using a 5 per cent solution. In patients coming for treatment during the first two days of the infection, symptoms subsided following two daily treatments in about 50 per cent; results were not improved by giving patients sulfanilamide solution to use as nasal drops at home. The author is of the opinion that in acute rhinitis the nares are so swollen that application by nasal sprays or drops is ineffective. He has accordingly used the Proetz suction method for the application of sulfonamide compounds in acute rhinitis. At first neoprontosil in a 2½ per cent solution was used, but later sulfanilamide in 0.8 per cent solution. This method has been employed with the sulfanilamide solution in 528 cases of acute rhinitis; 69 of these patients did not report back for reexamination. Of the 459 patients reexamined, 403, or 87 per cent, were cured or greatly improved; 56, or 12 per cent, not improved; in 30 of the latter group the symptoms were worse. The author has heard indirectly from many of the 69

patients not reexamined that they were satisfactorily relieved by the treatment. As acute rhinitis "checked at its onset" has a tendency to recur, the author advocates a second treatment given two days after the first. Very few patients developed acute sinusitis and none developed acute otitis immediately following treatment. Results of local applications of sulfanilamide have not been so good in acute sinusitis. In pharyngitis local applications of sulfanilamide have not given better results than local treatment with other antiseptics commonly used. In acute laryngotracheitis, however, local application of sulfonamides has given better results than other forms of local therapy; neoprontosil applied with a power spray, having the patient inhale repeatedly, has been used in these cases; sulfanilamide has not been employed. In all these types of acute respiratory infection, the treatment is most effective in the early stage of acute inflammation; if there is no response in the first two days, the drug should be given by mouth if its further use is indicated.

COMMENT

This sounds very good indeed. A recent article regarding the use of 5 per cent sodium sulfathiazole also reported excellent results in a smaller number of cases. Much recent work on the effect of the pH of various medications used in the nose may eventually tie in with this use of sulfonamide drugs and lead us to an effectual evaluation of their use in local intranasal therapy. We wish to commend the author also for his last statement regarding use of sulfonamides by mouth if they are indicated.

L.C.M.

Chronic Maxillary Sinusitis

J. B. NAIL (*Archives of Otolaryngology*, 34:99, July 1941) reports 70 cases of chronic maxillary sinusitis in which the Caldwell-Luc operation was done; the condition was bilateral in 15 of these cases, and the operation was done on both sides, making a total of 85 operations. The diagnosis was confirmed by roentgenological examination in all cases, with or without the use of poppyseed oil. Bacteriological examination showed a streptococcus infection in 51 cases, mixed infection in the remainder. Thirty-two patients had dental

involvement or had had teeth extracted on the diseased side; in 7 cases the sinusitis "resulted directly" from the dental infection. There was a complicating allergic condition in 9 cases (asthma, 5 cases and hay fever, 4 cases); the sphenoid and ethmoid sinuses were involved in 20 cases; and the frontal sinuses in 2 cases; there were foreign bodies in the antrum in 3 cases; in one of these the foreign body was the root of a second molar tooth. The duration of symptoms except in those cases in which a foreign body was present varied from two months to twenty years; an intranasal operation had been done previously in 19 of these patients without clearing up the condition. In the other cases, the conditions found on careful study of each patient "were considered to be beyond the scope of intranasal surgical treatment." The horizontal incision was used for all operations in this series; devitalization of teeth resulted in several patients, but there was "permanent disturbance of sensation in only one instance." In this regard, the author's experience has shown that the horizontal incision "is no more hazardous" than the vertical incision. Continued follow-up of these patients for several years has shown that 58 were entirely relieved of symptoms; 7 improved; 2 not improved; 3 patients whose condition was satisfactory on discharge from the hospital could not be traced. Of the 9 patients who had complicating allergic symptoms, 3 have shown progressive improvement in these symptoms, of whom 2 are entirely free from symptoms five and eight years respectively after operation; 2 others showed temporary improvement, and 4 no improvement in their "allergic status." Four patients had symptoms simulating tic douloureux, which were completely relieved within three months after operation; in each case cysts or polypi were removed. If in performing the Caldwell-Luc operation it is possible to leave mucosa around the ostium, the physiological function is better than if this is not possible. Histopathological studies of tissue removed have shown that not only evidently diseased mucosa but also that showing "questionable" changes should be removed. By

making such histopathological studies and correlating the findings with the diagnostic findings, "otolaryngologists can improve their judgment in the selection of patients who should be operated on by the transoral method."

COMMENT

It has been our experience, in a comparatively dry middle western climate, that a very large majority of patients with chronic maxillary sinus infections can be relieved of their symptoms by making permanent antral windows and cleaning out diseased anterior ethmoid cells. Except in those sinuses containing foreign bodies almost all those upon whom the Caldwell-Luc operation has been necessary have first had a naso-antral window and have been given several months to see if the symptoms could not be relieved by that method. We wish also to commend the author for stressing the correlation of clinical findings and histopathology in the endeavor to fit the treatment to the individual patient.

L.C.M.

Cancer of the Larynx

On the basis of his observations in 360 cases of cancer of the larynx, GABRIEL TUCKER (*Southern Surgeon*, 10:671, September 1941) concludes that cure can be obtained in about 85 per cent of cases in which the growth can be removed by laryngofissure. To obtain such a high percentage of cures, early diagnosis is essential. The two earliest symptoms of laryngeal cancer are hoarseness and local discomfort ("a feeling of something abnormal, sticking or pulling sensations"); hoarseness is the initial symptom if the tumor involves the vocal cords or "vocal area" of the larynx. Benign tumors cause similar symptoms; hence in every case in which either of these symptoms occur, careful examination is necessary to establish or rule out the diagnosis of cancer. In the author's experience, at least 70 per cent of cancers of the larynx originate intrinsically and are therefore "amenable to surgical treatment," if the cancer is still "within the larynx" when the diagnosis is made. In small anterior intrinsic growths, the cancer area can be radically removed by laryngofissure; this is the most favorable type, giving the highest percentage of cures, as noted above. In more extensive intrinsic growths, that can-

not be removed by laryngofissure, partial or total laryngectomy is indicated, according to extent of the growth; in total laryngectomy, the author has had best results with subperichondrial extirpation of the larynx; and radiation therapy or a combination of surgery and radiation, if glandular metastases develop later. After laryngectomy, the author has found, a large percentage of patients develop an "esophageal voice"; it is of value to have the patient instructed by someone who has had a laryngectomy and has successfully developed an esophageal voice. If necessary an artificial larynx may be employed. Irradiation therapy by Coutard's method has been employed in all cases in which the disease extended beyond the larynx; also in all cases of intrinsic origin with glandular metastases. In some cases of intrinsic laryngeal cancer in which the extent and grading of the tumor indicated operation, but the patients were poor surgical risks, radiation therapy was employed; results were especially good in patients over sixty-five years of age. In some cases recurrences have been treated by operation when the primary growth was treated by intensive irradiation; in other cases the recurrence was treated by irradiation after operation on the primary growth; in both these groups results have been "excellent." In extrinsic growths, the "proper application" of irradiation therapy "will probably cure a greater percentage of cases than surgery"; but the morbidity after intensive radiation may be as great as after laryngectomy by modern technique. Laryngofissure is the method of choice wherever possible.



COMMENT

A very excellent summing up of the author's conclusions following careful observance of a large series of cases. His opinions are in agreement with the majority of those dealing with cancer of the larynx. He has been consistently a leader in the progress of treatment of this condition.

L.C.M.



A Simple Technic for Photography of the Drum Head

I. HANTMAN (*Archives of Otolaryngology*, 34:7, July 1941) describes a technique for photographing the drum head in natural colors. Color photography, he notes, has recently been increasingly utilized in medical practice, and in many cases because of the "anatomic intricacies" of the body cavities, the physician must help to solve the technical problems. The camera used is one that can be used for other types of work in otolaryngology made by the Cameron Surgical Specialty Co., and provided with a synchroflash bulb which provides suitable illumination. The author has designed a focusing device to be used with this camera; the proximal portion of this device is attached to the camera, and the distal portion receives the ear speculum. The widest ear speculum that will fit into the canal should be used, preferably one with an oval cross section. The focuser is so made that while it moves the speculum forward and backward it does not rotate it. For photography of the ear drum by this method, the patient is seated as for an examination of the ear; the ear speculum is introduced into the aural canal as far as possible without causing pain or discomfort; and the drum head is visualized with reflected light. The camera with focuser is then slipped over the end of the ear speculum. The membrane is visualized through the ground glass by means of a pilot light attached to the camera. The membrane is seen "inverted and reversed," so that experience is necessary before the operator can "orient" himself; but this is "easily accomplished," and by adjustment of the focuser, the membrane is brought into exact focus, "the handle of the malleus being used as the focusing point," before the signal is given to the assistant to release the

shutter of the camera. In order to carry out this method of photography the patient's aural canal must be sufficiently wide to admit a large speculum and readily straightened out. The most important advantage of this method is that it is simple and easily carried out in "a few seconds." With practice and "the refinement of technique which will readily follow practice," excellent color photographs of the drum head can be made "showing fine details."

COMMENT

This is certainly the age of photography. Color photographs of the tympanic membrane should be very valuable for teaching purposes and for permanent records of interesting and unusual conditions.

L.C.M.

The Influence of Nasopharyngeal Hyperplasia on the Ear

H. P. SCHENCK (*Laryngoscope*, 51:780, August 1941) presents a study of 22 children between six and twelve years of age, all of whom had had tonsils and adenoids removed previously but showed hyperplasia of the residual portions of Waldeyer's ring. No treatment was given for at least six weeks; then a biopsy specimen of the hyperplastic tissue in the vicinity of the orifice of the Eustachian tube was removed. Subsequently irradiation therapy of the hyperplastic tissue was carried out, and further biopsy specimens studied after treatment was completed. Three methods of irradiation were employed in these cases: With technique A only roentgen therapy was used directed transorally through a circular cone; with 200 kv and a filter of 0.75 mm. copper and 2.0 mm. aluminum, a total dosage of 600 r. measured in air was given each nasopharyngeal area. With technique B, both radium and roentgen rays were used; the radium was applied by means of a nasal applicator; for roentgen therapy, given between radium applications, 140 kv. with $\frac{1}{4}$ mm. copper and 1 mm. aluminum was used; a total dosage of 2.0 gram-minutes of radium and a total of 180 r. roentgen therapy through each sinus anteriorly and 180 r. through each antrum was given. With technique C, only radium was employed, with an applicator that could be placed against the Eustachian tube orifice;

each side was given a total dosage of 4.0 gram-minutes of radium. Seven of the 22 patients did not complete the full course of radiation therapy; biopsy specimens showed only minimal changes in these cases. In the cases completing treatment, maximal changes in the lymphoid tissue were observed two and four weeks after completion of the radiation. These changes were of the same type with all techniques of treatment, and were characterized by reduction in the bulk of the follicles, no widespread destruction of adult lymphocytes but rather destruction of the other cellular constituents of the nodules; the cells of the germinal follicles were particularly radiosensitive. Hearing tests made following irradiation on the 15 children completing the course of treatment showed that of 4 patients treated by technique A, 3 improved; of 4 treated by technique B, 2 improved; of 7 treated with technique C, 2 improved. Three patients treated by technique C, but not completing the course, were also improved. The standard of improvement in these cases was an average gain of 20 db. through the tone range 128 to 16,384, even if this occurred in only one ear. A further study of the effects of lymphatic obstruction on the middle ear "seems indicated."

COMMENT

An interesting follow-up study of the work of Crowe and others at Johns Hopkins. The prevention of deafness is a tremendous problem. This work represents probably the most progressive step since the development of adenoid surgery.

L.C.M.

Pneumococcus Type III in Otitic Infections

A. H. PERSKY (*Archives of Otolaryngology*, 34:473, September 1941) reports a study of cases of mastoiditis in which infection was due to the pneumococcus. In 190 mastoidectomies in which cultures were positive, the pneumococcus was isolated in 33 cases; in 26 of these cases the organism was of type III, and all showed the same clinical characteristics. Roentgenological classification of the mastoids was not made in 11 of the 33 cases; of the remaining 22, good or extensive pneumatization was noted in 16 cases. In 3 cases in which symp-

toms had been present less than a week, the patients all developed meningitis and died soon after admission. In 17 cases with symptoms of one to four weeks' duration, 2 had meningitis, 13 showed extensive necrosis, 6 had perisinus abscess and 6, subperiosteal abscess; in 12 cases of over one month's duration extensive necrosis was present in 8 cases, perisinus abscess in 4 cases, meningitis developed in one case, cholesteatoma and sinus thrombosis in one case each. In most of these cases, the symptoms were those of a slow progressive otitic infection; the discharge was persistent, usually thin and watery, varying in character, but showing very little variation in quantity. Postauricular pain was not as severe as in streptococcal infection, but there was more frequently a dull, persistent deep-seated pain which might become "a true hemicrania." Deafness and tinnitus were frequent; the deafness often seemed more marked than would be expected from the appearance of the drum membrane; the perforation of the drum membrane was usually small; the membrane was dull, lustreless, and sometimes thickened. In 29 of the cases a simple mastoidectomy was done (3 bilateral); a radical mastoidectomy in only 2 cases; no operation was attempted in 2 cases with meningitis. There were 5 deaths in the 33 cases, all due to meningitis. In the 29 cases in which simple mastoidectomy was done, extensive necrosis was found in 20 cases and other complications were frequent at the time of operation. Yet in most cases recovery was uneventful and secondary complications did not occur. On the basis of these findings, the author concludes that early operation is indicated in cases of mastoiditis in which pneumococcus type III infection is suspected or proved.

L.C.M.

COMMENT

A valuable review of a problem well known to otologists. These cases require very careful study and adequate surgery. We would like to add one word of caution, "Beware the masking effects of the sulfonamide drugs". These pneumococcus type III cases are often deceiving and insidious in their progress and the use of sulfonamides may make them even more so.

L.C.M.

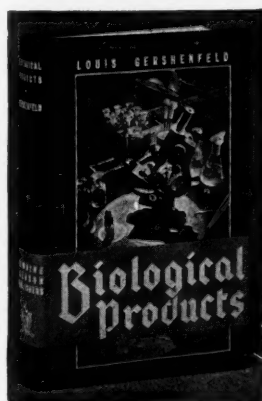
—Concluded on page 494

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War Medicine Up-To-Date — Be Prepared

Hurst—MEDICAL DISEASES OF WAR

By Sir Arthur Hurst, M.D., F.R.C.P. Lieutenant-Colonel, late R.A.M.C. Lecturer on Clinical Medicine, Oxford University; Consulting Physician to Guy's Hospital, etc. Second edition (1941), viii+ 427 pages, 47 illustrations, \$5.50.

Here is a timely authoritative book of the utmost practical value and importance to every medical officer already in active service, to those who may yet be called, to members of examining boards, and indeed to all civilian physicians. This is not merely a reprint of the 1940 edition. Every chapter has been revised and brought up-to-date in the light of recent war experience in England and elsewhere, supplemented by reading the latest available British and Continental literature. One hundred pages and ten illustrations have been added.

Colonel Arnold Stott has written a new chapter on meningococcal fever, the prompt recognition and treatment of which are proving important Army problems. In view of the campaign in the Middle East the chapter on amebic dysentery omitted from the 1940 edition has been revised and reintroduced. Col. H. B. F. Dixon has written a chapter on Malaria. Digestive disorders have proved very common in the British Army at home and abroad therefore a chapter on the subject has been added. Dr. T. A. Ross added a postscript to his chapter on Anxiety Neuroses in War before his lamented death. As the *Journal A.M.A.* says: "Because of its preeminently practical and authoritative grasp of the problems of military medicine this volume cannot be too emphatically recommended as compulsory reading for the medical personnel of the examining boards and of the medical officers in active service."

The Military Surgeon says:

"A very timely book which could be studied with profit by both medical officers and civilian physicians."

War Medicine says:

"A manual for a ship's surgeon's five foot shelf or for medical officers at any post this book can be highly recommended."

Psychiatry says:

"It is eminently suited to informing the medical man on the special problems he will encounter as a medical officer with troops engaged in relatively static warfare, and is most commendably practical in fulfilling this mission. It is distinctly the book of the day."

Journal of Medicine says:

"Since recent events have taught us that loss of time spells defeat it would seem imperative to the reviewer that every medical officer should become familiar with Hurst's Medical Diseases of War."

N. Y. State Journal of Medicine says:

"The vast experience of the author and the access he has had to the medical records of the various armies has enabled him to give an excellent work. In bringing this work up-to-date the author and his collaborators have given us a useful and timely treatise on military medicine."

The 27 chapters include: Predisposing Causes of War Neuroses—Hysterical Symptoms in Soldiers—Hysterical Paralysis—Hysterical Contractures—Rheumatism, Sciatica, and Hysterical Postures and Gaits—Hysterical Tremor—Hysterical Fits—Disorders of Speech—Functional Disorders of Hearing—Functional Disorders of Vision—Stupor and Amnesia—Cerebral and Spinal Concussion—Exhaustion resulting in Neurasthenia—Hyperadrenalism and Hyperthyroidism—Anxiety Neuroses of War (By T. A. Ross, F.R.C.P.)—Trench Fever—Typhoid and Paratyphoid Fevers—Dysentery—Epidemic Jaundice—Malaria (By Col. H. B. F. Dixon)—Meningococcal Fever (By Col. A. W. Stott)—Tetanus—Digestive Disorders in Soldiers—War Nephritis—Effort Syndrome—Skin Disease in War (By H. W. Barber, F.R.C.P.)—Gas Poisoning.

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BOOK NEWS

Edited by

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All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

The New Specialty—Geriatrics

The Care of the Aged (Geriatrics). By Malford W. Thewlis, M.D. Third edition. St. Louis, C. V. Mosby Company, [c. 1941]. 579 pages, illustrated. 8vo. Cloth, \$6.00.

INTO "the shape of things to come," geriatrics fits naturally, for a larger and larger proportion of the senescent and senile will make up future populations in the United States because of three factors—declining birth rate, curtailed immigration, and lessening mortality in childhood and early adult life. Dr. Thewlis leaves this phase of the "wave of the future" mostly to the sociologists in so far as implications other than medicine are concerned, although what he does have to say on this score is remarkably penetrating (pages 45-46). He realizes that this senescent segment of the new order will be medically exacting because of its dominant position in human society, and so he does

justice to the ills of the aged as a special problem (which it is) and to gerontology, or preventive geriatrics. In so far as prema-

ture senility will be prevented, socio-economic problems will be mitigated by future medical palliators of the status quo. This is the reason why the author has to lean somewhat heavily on general medicine, for preventive geriatrics obviously hangs upon the complete clinical angle. Nevertheless, one must realize that many ills are "peculiar to the aged" and that "the presence even of those which also occur in younger people raises special therapeutic problems in senescence." The author's pioneering in preclinical medicine bespeaks a special fitness for his



DANIEL DRAKE
1785 ~ 1852

Classical Quotations

• It seems justifiable to ascribe, by analogy, to microscopic animals and plants the same diversity of properties which we find in larger beings, differing from them, as we may presume, in nothing but size and complexity of organization. We may suppose then, that while many species of this minute creation are harmless, there are others, which can exert upon our systems a pernicious influence.

Daniel Drake.

A Systematic Treatise on the Principal Diseases of the Interior Valley of North America, Vol. II. Published at Cincinnati and Philadelphia, 1850-1854.

present task.

The medicosocial discernment which provides an adequate treatise for the new

set-up that looms before us seems almost uncanny to this reviewer. For just what specialty has this been done before?

What the state in the hands of the aged may be like everywhere is perhaps best illustrated in the present by the case of France. The dubious influence of its many old people, headed, significantly enough, by the octogenarian Pétain, may there be seen by all. Here we have something which those largely responsible for our lowering birth rate should think over.

The stars of human destiny portend many Pétains.

ARTHUR C. JACOBSON

Meningococcal Fever

Cerebrospinal Fever. By Denis Brinton, D.M. Baltimore, Williams & Wilkins Company, [c. 1941]. 163 pages, illustrated. 8vo. Cloth, \$3.00.

CEREBROSPINAL fever almost invariably becomes a common and very serious disease during wars and overcrowding. Its incidence in Britain has increased tremendously in the last two years because of favorable conditions for its spread. This book by Brinton is, therefore, timely and useful. It presents a complete study of infection by the meningococci and appraises all the recent modes of treatment. It is a volume that is well worth perusal.

ANDREW M. BABEY

Bridges Nutrition

Dietetics for the Clinician. By Late Milton A. Bridges, M.D. Fourth edition. Philadelphia, Lea & Febiger, [c. 1941]. 960 pages. 8vo. Cloth, \$10.00.

THIS edition was posthumously published with the assistance and cooperation of a group of Dr. Bridges' colleagues. It is a large volume and is as complete and modern a textbook on practical nutrition as has been written. The first part is devoted to the physiology of digestion and metabolism, vitamin factors in the diet, the role of the acid-base factors in nutrition, and tables of food factors. The second part is devoted to a discussion of diet in disease. Every disorder that requires some form of dietary management is adequately presented.

This latest revision of this book is highly recommended to the practicing physician as an important aid in his daily practice.

WILLIAM S. COLLENS

Medical Practice In Africa

Native African Medicine. With Special Reference to its Practice in the Mano Tribe of Liberia. By George W. Harley, M.D. Cambridge, Harvard University Press, [c. 1941]. 294 pages. 8vo. Cloth, \$3.50.

THERE are not many detailed objective studies of medical practice among primitive peoples, so that the present volume comes as a welcome addition to this field. It gives an excellent ethnographic picture of the practice of medicine in the Mano

tribe of Liberia. Dr. Harley, who has had more than twenty years of experience as a medical practitioner in West Africa, offers a detailed factual account of the Mano conceptions of disease, their rational and magic treatments of disease, various special aspects of medicine and magic, and concludes with a survey of native medical practice in Africa as a whole.

GEORGE ROSEN

Genital Endocrinology

Clinical and Experimental Investigations on the Genital Functions and Their Hormonal Regulation. By Bernhard Zondek. Baltimore, Williams & Wilkins Company, [c. 1941]. 264 pages, illustrated. 8vo. Cloth, \$4.50.

IN this monograph Zondek reports on his work of the last four and a half years. Detailed account of investigations and his careful record of laboratory experiments are of great importance to workers in this field of hormonal research. The gynecologist, however, will find much of practical interest. In cases of pruritis vulvae and amenorrhea, for instance, injections of estrogenic hormone may be partly replaced by rubbing into the skin alcoholic tinctures of estrone, or estrone ointments. Application of estrogenic hormone, followed by injection of progesterone will produce uterine bleeding in primary and secondary amenorrhea.

Zondek believes that cycle and menstruation are produced independently of the ovum, that the ovum is of no significance as a cause of the cyclic changes in the uterus. This is contrary to the generally accepted theory. A stimulating and valuable book.

CHARLES A. GORDON

Military Neuropsychiatry

The Minds and Nerves of Soldiers. By Edward L. Hanes, M.D. Pasadena, California, The Login Press, [c. 1941]. 221 pages, 8vo. Cloth, \$3.00.

THE book represents work in the field. The author, in shorthand, recorded the actual words of officers and men preparing for induction into the developing U. S. Army of 1917. Later the intimate thoughts and words of patients were similarly set down for subsequent consideration.

Perhaps the most important chapter is concerned with the formulation of methods of nervous and mental examinations; first at the R.O.T.C. at Plattsburg Barracks; subsequently at the enlistment station at Columbus Barracks, O. Efficient practice soon demonstrated that each man must be personally interviewed, briefly or for detailed examination. Waiting for suspected cases to be referred by line officers, or other examining physicians untrained in nervous and mental diseases proved impracticable.

It was new work, for no army at war had ever undertaken systematic neuropsychiatric examinations. How the problem was approached in 1917 is described in simple fashion by the process of "stand-up" clinical interviews with each man, which soon developed neuropathic or psychopathic trends, if present. It is hoped that the value of this method may prove itself during the present emergency.

After these examinations for induction into military service the writer accompanied the A.E.F. overseas as a member of Base Hospital #19, of Rochester, N. Y. Stationed in Vichy (Fr.), as ranking neuropsychiatric officer, he was placed in charge of this work for the Vichy Base Hospital Center, hospitalizing over 17,000 patients. Types are described. Certain philosophies of origin, and methods of treatment are explained.

Among the subheads are Methods of Examination, Temperament and Personality, Mental Deficiency among Recruits and Overseas, Psychopathic Personality, Epilepsy, Nervous Injuries due to Gun-shot Wounds and Causes other than Physical Trauma, the Variant Mental Attributes of Men, Somnambulistic Dreaming, and Dream Theories, Nostalgia, Philosophical Considerations in War Hysteria, Various Forms of "Shell Shock," War Psychoses, etc.

C. W. HENNINGTON

Dental Pathology

Your Teeth: Their Past, Present, and Probable Future. By Peter J. Brekhus, D.D.S. Minneapolis, University of Minnesota Press, [c. 1941]. 255 pages, illustrated. 8vo. Cloth, \$2.50.

THIS book is an excellent summation for a rapid review of the past and present studies of the causes of caries and pyorrhea. Particular attention is given to the bacterial and nutritional theories, though, with the exception of endocrine imbalance, adequate attention is given to all theories. The chapter on "The Teeth of Other Races" is a quick, but worthwhile appraisal of known data upon the subject.

However, it is questionable whether the book is sufficiently well-balanced for other than those familiar with the problems of dentistry. Its author would seem to have an underlying pessimistic habit of thought.

The first chapter, "Is Civilization a Disease?" marks that limited school of thought which, after studies in various theories of evolution, reaches the depressing conclusion that the only way to make man a healthy human being is to make him an animal. The compilation in the following chapters of the failures to discover the true causes of dental disease adds to this impression. Although these latter observations are needful, and admittedly the present possibility of solution of these problems is but slight, nevertheless it is by no means hopeless. To conclude that the only present solution is to throw the responsibility of this problem upon the government is a defeatist attitude.

However, with the exception of this

pessimism, the book is a sobering and worthwhile review of the knowledge, or lack of knowledge, of the causes of dental diseases.

JOSEPH J. STAHL

A New Edition of May

Manual of the Diseases of the Eye for Students and General Practitioners. By Charles H. May, M.D. Seventeenth edition. Baltimore, William Wood and Company, [c. 1941]. 519 pages, illustrated. 12mo. Cloth, \$4.00.

THE seventeenth edition of this classical work comes to us in a thoroughly up-to-date form; as its contents are modified from time to time to keep in the forefront of progress. If the reviews of all the editions were compiled, they would represent a volume of eulogies as thick as the present edition.

The gradual addition of the many fine color plates has made this book more and more understandable, and in recent years the addition of certain tables and statistical data, as on compensation visual rating, army and navy requirements, etc., have added reference qualities which are not easily available from other sources.

The usefulness of this work as a quiz book for medical students should meet the curriculum of any modern institution. We suppose without doubt, that it is used in more medical schools than any other work on ophthalmology.

JOHN N. EVANS, M.D.

Diseases of the Nervous System

Foundations of Neuropsychiatry. By Stanley Cobb, M.D. Second edition. Baltimore, Williams & Wilkins Company, [c. 1941]. 231 pages, illustrated. 8vo. Cloth, \$2.50.

THE present second edition of this work, formerly known as *A Preface To Nervous Disease*, is a revised and enlarged one. Additional facts have been supplied for the chapters dealing with autonomic system, the thalamus, the frontal lobes, the circulation of the brain and cord, epilepsy, and psychopathology. The author's purpose in writing this book is ably accomplished. He states this aim as follows, "The Book is written to give practitioners and students of medicine the facts and correlations needed to understand the simpler workings of the nervous system." The text is clearly written and diagrams, schematiza-

tions, and tabulations further aid the student in visualizing the anatomy, physiology, and pathology necessary in the approach to an understanding of the principal disease entities of clinical neuropsychiatry. The author points out many relationships between psychiatry and its fundamental basic sciences. Where disagreement over terms is current, this fact is plainly stated, and no dogmatically expressed conclusions are given on partially proved problems.

The author's profound knowledge of his subject and excellent insight into the students' needs are manifest throughout the book. Altogether, the new edition brings up to date a concise introduction to the study of diseases of the nervous system.

ROBERT WM. SOUTHERLAND

Keep Sober!

What Price Alcohol? A Practical Discussion of the Causes and Treatment of Alcoholism. By Robert S. Carroll, M.D. New York, The Macmillan Company, [c. 1941]. 362 pages. 8vo. Cloth, \$3.00.

THE book makes a strong plea for abstinence from alcoholic drinks. Many cases are cited to illustrate the destructive influences the unrestrained abuse of alcohol has on the patient, his family and society as a whole. The hereditary influences on offspring, the development in some cases of epilepsy and of other physical and mental defects are properly stressed. The author views drinking as an escape from reality, from life's hardships and responsibilities. Alcohol as a cause of neuroses and psychoses are dealt with. There are chapters on alcohol and reality, moral and unmoral, benign and pathological reaction types. The book is a strong crusade in a worthy cause. All luck to the author!

JOSEPH SMITH

South American Surgical Cases

Clinicas y Critica Quirurgicas. By Francisco H. Rivero, M.D. Caracas, Avenida San Martin 315, The Author, [c. 1941]. 236 pages, illustrated. 8vo. Paper.

THIS monograph deals with a number of surgical case reports with critical analysis of each. It covers a wide surgical field, and is both interesting and instructive. The author presents his material thoroughly and clearly.

GAETANO DE YOANNA

Diabetic Patients' Guide

A Primer for Diabetic Patients. An Outline of Treatment for Diabetes with Diet, Insulin and Protamine-Zinc Insulin. Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M.D. Seventh edition. Philadelphia, W. B. Saunders Company, [c. 1941]. 184 pages. 16mo. Cloth, \$1.75.

DR. WILDER found it necessary to write the 7th Edition of his primer because of improved methods in the administration of protamine zinc insulin. This has of course resulted from an increased knowledge of the pharmacology of protamine insulin. This primer is one of the best available for the layman. It is technically correct, well written, and possesses all the practical information that the layman needs for an intelligent understanding of the treatment of diabetes. The book is profusely illustrated with photographs

and drawings which aid in making this work easily understood.

WILLIAM S. COLLENS

Clinical Cardiology

Cardiac Clinics. Mayo Clinic Monograph. By Frederick A. Willius, M.D. St. Louis, C. V. Mosby Company, [c. 1941]. 276 pages, illustrated. 8vo. Cloth, \$4.00.

BY request of numerous readers, Willius has been persuaded to collect in one volume the numerous, brief presentations of cardiac problems that have appeared in the "Proceedings" of the Mayo Clinic staff meetings during the last year or two. It is designed for the busy general practitioner and is a fine review of many practical problems in heart disease.

ANDREW M. BABEY

BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

Synopsis of Applied Pathological Chemistry. By Jerome E. Andes, M.D. and A. G. Eaton, M.A. St. Louis, C. V. Mosby Company, [c. 1941]. 428 pages, illustrated. 12mo. Cloth, \$4.00.

Microbes Which Help or Destroy Us. By Paul W. Allen, Ph.D., D. Frank Holtman, Ph.D. and Louise A. McBee, M.S. St. Louis, C. V. Mosby Company, [c. 1941]. 340 pages, illustrated. 8vo. Cloth, \$3.50.

Handbook of Communicable Diseases. By Franklin H. Top, M.D. St. Louis, C. V. Mosby Company, [c. 1941]. 682 pages, illustrated. 8vo. Cloth, \$7.50.

Cardiac Clinics. A Mayo Clinic Monograph. By Frederick A. Willius, M.D. St. Louis, C. V. Mosby Company, [c. 1941]. 276 pages, illustrated. 8vo. Cloth, \$4.00.

A Manual of Bandaging, Strapping and Splinting. By Augustus Thorndike, Jr., M.D. Philadelphia, Lea & Febiger, [c. 1941]. 144 pages, illustrated. 12mo. Paper, \$1.50.

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CONTEMPORARY PROGRESS

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Local Sulfonamide Therapy in Acute Mastoiditis

G. S. LIVINGSTON (*Journal of the American Medical Association*, 117:1081, September 27, 1941) reports the local use of sulfonamides at the time of mastoidectomy for acute mastoiditis. In the first series of cases, mastoidectomy was done by the usual method with rubber tube drainage; sulfanilamide crystals were placed in the mastoid cavity before closure. The results in this series were not better than in cases operated by this method without sulfanilamide; purulent drainage occurred and the average time necessary for complete healing was "about the same" as when no sulfanilamide was used. In the next series of cases, the mastoid operation was done in the usual way, the cavity was filled with sulfanilamide crystals in some cases and with sulfathiazole crystals in others; then the wound was sutured tightly without drainage. There were 13 patients in this series; 11 had subperiosteal abscess at the time of operation, 4 had perisinal abscess, 2 had extradural abscess and one had "threatened intracranial invasion," as indicated by the occurrence of a convulsion and hemiparesis. In these 13 cases, purulent drainage occurred in only one instance; another showed two recurrences of the serous discharge; in these two cases healing took thirty-one days and thirty days respectively. In the other 11 cases, the longest time re-

quired for healing was nine days; in one of these cases there was a slight recurrence of serous discharge on the seventh day after the wound had been healed four days. All the others healed by primary union. There was no case of suture suppuration; and a "remarkable" absence of postoperative inflammatory reaction in the soft tissues was noted. Eight patients had no postoperative fever. Only one patient developed sulfanilamide rash, accompanied by fever for one day. The largest amount of sulfanilamide used in any case was 4 gm., "which completely fills a large mastoid cavity." Smaller amounts were used in smaller cavities. With 4 gm. implanted, the blood concentration in the first twenty-four hours was 4.7 mg. per 100 cc. and fell rapidly. Thus with maximum local application, the blood concentration was less than is usually maintained by oral therapy, and even this concentration was not maintained for more than a day or two. Therefore the danger of acute toxicity from this use of the sulfonamides is "negligible," while the operative results are favorable, in that primary healing occurs in most cases and the postoperative period is definitely shortened.

COMMENT

Many systemic factors enter into the healing time of mastoid wounds. Next to these the most important thing is adequate surgery for any particular mastoid. It is possible that such use of the sulfonamides may allow revival of the old "blood clot" method of closure with better results than it formerly had.

L.C.M.

The Recent Litigation Concerning Insulin, Statement by E. R. Squibb and Sons

THERE are at present three licensees who manufacture and distribute insulin, Lilly, Sharp and Dohme, and Squibb. We have no information regarding Lilly, but we are informed that Sharp and Dohme are at present selling below cost and for the year 1940 alone, Squibb suffered a loss of over \$20,000, on its insulin sales as established by an audit prepared by an independent firm of certified public accountants. Moreover, for the ten-year period from 1931, profit to Squibb was equivalent to less than 5% of its total sales.

Until recently, there was a fourth manufacturer of insulin. But because of extreme competition in this field, this manufacturer was forced to drop its insulin business.

The cost of the glands used in the manufacture of insulin has increased 60% since 1925 and 30% since 1931. Despite this increase in the cost of glands, improvements in the cost of manufacturing methods have reduced the total cost of manufacturing the product 30% since 1931.

During the same period when manufacturing costs were being reduced 30%, the selling price of our insulin was reduced 75%. A 10 cc. 40 unit vial of insulin, the standard vial sold, sold for \$2.40 in 1925, \$2 in 1931 and at present sells for 57 cents. This means that the average cost of a daily dose to the majority of diabetics was 31 cents in 1931 and is 8 cents today.

The present low cost of insulin to the diabetic emphasizes the competitive conditions in the insulin field, and the fact that this field is not one in which Squibb is profitably engaged. The 1940 losses and the low percentage of profit over the last ten years reveal this clearly; and, in reality, there has been no profit over the last ten years, since research and promotion of the product have consumed a disproportionate amount of time on the part of Squibb's large technical and sales staffs.

The selling costs assigned to insulin in making up its profit and loss figures are merely with respect to volume of sales and not with respect to the total time involved in the promotion and development applied

to this product. Large expenditures for research and promotion have not been charged against the cost of production; nor have any allowances been made for capital invested in our insulin plant, equipment, and inventory.

Moreover, the product itself has been substantially improved over the original unmodified insulin sold in 1925 and with the addition of protomine zinc insulin in 1937 and of zinc insulin crystals in 1938, other forms of insulin offering further advantages are being marketed. The last two improved products mean that a dose of insulin will last a diabetic for a much greater period of time and will furnish the diabetic with a more even dosage.

Squibb submits that it has presented to consumers most efficacious types of insulin at prices in every sense moderate and fair, and at the lowest possible cost commensurate with its high quality and standards of production and control.

Conserving Men, Money, and Materials in Essential Industries

IN times like these, when industry is confronted with emergency production demands, the need for more effective accident controls in order to conserve men, money, and materials becomes of paramount importance. Plant expansion, development of new processes, maintenance of heavily worked equipment, employment of new workers, and other similar problems call for more than usual ingenuity and skill on the part of management, if a "job" is to be done not only well but safely.

These vital considerations are emphasized in a new report issued by the Industrial Safety Section of the Metropolitan Life Insurance Company. The report is entitled, "Conserving Men, Money, and Materials in Essential Industries." It is basically a discussion check list for the industrial executive concerned with emergency production.

The report lays particular stress on the proper consideration of accident costs. Of far greater significance than the threat of personal-injury accidents are the enormous potential losses of precious time and the

spoilage of equally precious materials that result from mishaps sometimes termed "near accidents"—indirect losses which are generally overlooked in compiling accident reports or statistics, yet which to the production executive represent very real items of industrial waste.

As an aid to the study of industrial accidents and to point up proper means for

their control, the report briefly develops several fundamental considerations for employee safety.

Copies of this report are available to executives who address the Bureau on their business stationery. Address: Policyholders Service Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York, New York.



Intravenous Administration of Vitamin C

FOR patients who are severely ill or with abnormal requirements of vitamin C such as are connected with surgical procedures, and for patients with poor utilization or faulty absorption of this vitamin, E. R. Squibb & Sons, New York, now supply Solution Sodium Ascorbate for intravenous administration. Made from the sodium of salt of pure synthetic ascorbic acid (vitamin C), Solution Sodium Ascorbate contains per 1 cc. an amount equivalent to 100 mg. of ascorbic acid (2,000 U. S. P. XI units of vitamin C). It is supplied in 1-cc. ampuls, packaged in boxes of six and 25.

The average dose of Solution Sodium Ascorbate is 1 cc., equivalent to 100 mg. ascorbic acid. (One clinician reports giving as high as 10,000 mg., 10 grams, intravenously in a single dose to an adult.) The Squibb leaflet on this product gives suggested dosages in infantile scurvy, severe adult scurvy, capillary fragility and surgical patients.

Sulfadiazine

SULFADIAZINE is made by a process of extraordinary difficulty. For many months the only supplies of the drug available have been laboriously made in a small scale plant in quantities just sufficient to supply the needs of clinical investigators. Perfection of the manufacturing technique involved and the operation of a new, specially designed plant, costing several hundred thousand dollars, will in the near fu-

ture assure ample supplies of sulfadiazine to meet the needs of the medical profession.

Sulfadiazine is being made by the Calco Chemical Division of American Cyanamid Company at Bound Brook, N. J. It is being marketed by Lederle Laboratories, Inc. (a subsidiary of American Cyanamid Company).

All five of the sulfa-drugs—sulfanilamide, sulfapyridine, sulfathiazole, sulfaguanidine, and now sulfadiazine—are produced in bulk by American Cyanamid Company and marketed in packages by its subsidiary, Lederle Laboratories.

Dr. Louis Klein Dies At Home in Upper Montclair

Dr. Louis Klein, 56, director of clinical research at Hoffman-La Roche, Inc., Nutley, N. J., died October 30, 1941, after a heart attack.

Dr. Klein had been clinical research director with Hoffman-LaRoche since 1935. For fifteen years before joining the Nutley concern he was associated with the Parke-Davis Co. in New York and Detroit.

Born in Brooklyn, Dr. Klein was graduated from the Long Island College of Medicine. He entered practice as a private physician in Brooklyn in 1917 and three years later joined the Parke-Davis concern. At Hoffman-LaRoche he also was editor of the Roche Review, a journal published by the concern for the medical profession. He also was a member of the Wayne County (Mich.) Medical Society.

EDITORIALS

Soil and Food

IN his article on "Nutrition and Longevity" which appeared in our November issue, Dr. John B. Fitts of Atlanta remarked that the real key to the present generation's nutritional problem was to be found in the nearly insurmountable handicap of depletion of the quality of the soil with respect to mineral content. Poor quality of soil spells poor quality of product and this probably goes for vitamins as well as minerals.

We called attention some time ago to the work of Dr. Robert Dumont of Brussels going to show that where the soil is poor deterioration of the peoples dependent upon it follows. Using the Belgian Congo and the Philippines as examples, Dumont has shown that in those regions where low-calcium food coming from soil extremely poor in calcium was depended upon by the natives, feebleness, premature senility and undue susceptibility to disease surely followed. He cites the Egyptian fellah as a small eater showing extraordinary resistance to fatigue and infection because of the high calcium content of his soil and food.



The people of the Belgian Congo and the Philippines are said to eat far more than the Egyptian fellah.

It has been suggested that calcium deficiency plays a part in cardiovascular disease, thus striking at the heart of nations. "How can a people lacking calcium be 'stout-hearted?' And how can a people lacking stout-heartedness be great?" So early migrations and the rise and fall of nations may have been conditioned by the hungry-search-for-calcium factor.

Dr. Robert R. Williams, who first isolated vitamin B₁ in usable quantities, speaking recently before the Associated Grocery Manufacturers of America, remarked that it is high time that we should be taking a detailed census of the occurrence of the six principal vitamins in foods and exercising every reasonable precaution that our methods of manufacturing, distributing and preparing foods conserve these values and "get them to the mouth." To some extent, he said, staleness of green groceries may be responsible for shortages of vitamin A and riboflavin.

What are the real—not theoretical—val-

ues of our foods? To what extent does the thesis of Dr. Fitts account for some of the disconcerting features of the nutrition problem in America?

An abundance of food of poor quality is not the answer to this problem.

Tobacco Road

THERE is undoubtedly a deep reluctance on the part of reactionaries to improve the purchasing power of the medically indigent or of the absolutely indigent. Charity or the governmental policy that sees the country as one big settlement house is approved, but the reactionaries see in any real change in the status quo a threat of some sort to their own security. Free medical service for the absolutely indigent, based upon taxation, and compulsory health insurance for the medically indigent fit into their scheme of things, but never any socioeconomic alteration that would enable these underprivileged groups to purchase their medical care in the true American way.

This Tobacco Road-like status must remain permanently frozen in our system, if the reactionaries have their way. Tobacco Road is sacred. It must be kept intact. Jeeter Lester must have his hydrocele tapped by the State now and then, but he must remain Jeeter Lester. He will indeed be frozen more effectually into the pattern. The relief of his hydrocele will release him for greater "efficiency"—as a Jeeter Lester.

Man, "Master of His Fate"

ESTABROOKS of Colgate University, in his *Man—The Mechanical Misfit*, indicts modern medicine as operating dysgenically, that is, we are salvaging the worst elements in society—worst from the Darwinian point of view—from which to breed stocks that mean biological deterioration.

A rational balance in such matters may be attained if one will weigh against Estabrooks' considerations the viewpoint of a writer like Mrs. Sophia P. Shaler (*The Masters of Fate*), who concentrates on the men and women who, out of their infirmities, made themselves ladders by which they climbed to high achievement and

sometimes glory. The frail Francis Bacons of the world would be destroyed in infancy or childhood by a ruthless State narrowly obsessed in its eugenic sphere of influence.

Life should hold room for both the lily—feeble thing—and the oak.

"The care required to maintain the lives of feeble persons," says Mrs. Shaler, "the discretion as regards hygienic conditions, and the study of means whereby lives which hang as by a thread may be prolonged, has a large reflex influence upon the vigor of the strong. The effort to avoid the consequences of malady made necessary by the presence of feeble lives helps in a large measure the welfare of the healthy, lifting them to a higher physical state. Thus, not only in a moral but in a physical way are the conditions of the well-to-do in body and mind advanced by the care of the weak."

The Hippocratic Oath In An Increasingly Unmoral World

ONCE upon a time the Hippocratic Oath was in itself sufficient to insure ethical practice because of its appeal to religious scruples and moral responsibility.

Today, drastic laws are almost the only means whereby the misconduct of physicians can be controlled.

Several thousand physicians in New York State are alleged by a lay organization engaged in propaganda for euthanasia to favor its legalization. But suppose it is legalized and some doctors act to implement it by proceeding to kill some appellants? The Hippocratic Oath would then, as a mere counsel of idealistic perfection, lose its old moral force completely.

In such circumstances, what meaning would the gesture of imposing the Oath upon groups of newly fledged physicians possess? How many of the neophytes and their sponsors would take and administer the vows with fingers crossed?

If and when euthanasia goes into effect will the Oath go into desuetude, as we have insisted, or will it be revised to conform with the lowered "standards" and weird "ethics" which increasingly promise

—Continued on page 529

THE PROPHYLAXIS AND TREATMENT OF *Peritonitis*

EDMUND H. MENSING, M.D., F.A.C.S.

Milwaukee, Wisconsin

Peritoneal Defense Mechanism:

PHAGOCYTOSIS represents the most important single defense mechanism against bacterial invasion of the peritoneal cavity.

Local inhibition of intestinal motility aids in localizing the infection.

The omentum possesses the ability to encapsulate an infective focus.

Fibrinous exudate and thrombosis of splanchnic lymph channels inhibit the absorption of toxins by circumscribing the invading organisms.

Reflex splinting of the abdominal muscles limits respiratory effort and thus inhibits absorption from the peritoneum; it is an experimental fact that absorption from the peritoneum is nil in the absence of respiratory motion.

Dilatation and stasis of the splanchnic capillaries result from the action of bacterial toxins and in the early stages are probably protective because they aid phagocytosis. The splanchnic capillary stasis usually progresses until atony of the bowel ensues, resulting in generalized splanchnic venous stasis and diminished venous-volume return.

The Absorption of Toxins from the Peritoneal cavity is Inhibited by (1) early removal of the source of infection, (2) withholding everything by mouth, (3)

lessened respiratory efforts, (4) "splinting" of abdominal muscles, (5) drainage of encapsulated purulent exudate.

The Absorption of Toxins from the Peritoneal Cavity is Accelerated by (1) food intake, (2) vomiting, (3) cathartics, (4) intestinal stimulants, (5) faulty operative technic, (6) enemas, (7) operation for diffuse peritonitis, (8) failure to drain encapsulated exudate, (9) lengthy anesthesia.

Acquired Immunity of the Peritoneum

IT IS a known fact that when a colostomy is performed or when an intestinal fistula develops, the peritoneum acquires an enhanced resistance to infection. This acquired immunity might be compared to the resistance to infection possessed by granulating wounds—"They protect by virtue of their phagocyte content, and prolonged venous stasis appears helpful because it allows the phagocytes to accumulate" (Gay).

Removal of the Source of Infection

THE early removal of the infective focus is the most important prophylactic measure against the development of a diffuse peritonitis. There should, however, be no excuse for extensive and multi-

ple incisions and dangerous explorations for the source of infection in the presence of a spreading peritonitis.

Removal of Exudate in Peritonitis

FREQUENTLY when operating very early for the removal of the focus of infection, a slightly turbid fluid presents itself which is protective in character because of its high phagocyte count. The earlier the operation the less is the need for removal of this fluid exudate. The appearance of even a moderate amount of turbid fluid does not necessarily imply widespread peritoneal infection. If the exudate assumes a frank purulent character it should be removed because it has become toxic.

In diffuse peritonitis pocketing by fibrinous exudate occurs, and drainage of these multiple encapsulated areas is impossible.

Prophylaxis of Peritonitis Due to Appendicitis

PURGATION and delay in operation are the two most important causes of a high death rate from peritonitis due to appendicitis.

A poorly performed operation for acute appendicitis is apt to convert a local infection into a diffuse one; for example, (a) ill-conceived right rectus incision, (b) evisceration of loops of bowel due to faulty technique or poorly administered anesthesia, (c) lavaging of the peritoneal cavity, (d) too much manipulation, (e) improper hemostasis, (f) use of enemas before operation and too soon after operation, (g) abuse of drains.

Delayed and neglected appendicitis cases have a high mortality rate due to peritonitis. During the first 48 hours after the onset of symptoms an incomplete encapsulation of the appendicitis occurs, which may readily be broken down by an operative undertaking. This observation has led to the adoption by many surgeons of the Ochsner or deferred treatment in these cases.

What is the Exact Status of the Ochsner Treatment Today?

IT IS well known that the intensity of a spreading peritonitis is accelerated by a

laparotomy and the question immediately arises whether it is better surgery to defer operation in an obviously perforated, delayed appendicitis case with spreading peritonitis, or whether the removal of the infective focus should be immediately attempted. I do not believe that Ochsner ever taught that operation should be deferred in this group of cases. With the introduction of sulfonamide therapy, both locally and parenterally, there is no real reason for Ochsnerizing in any delayed, perforated appendix case with spreading peritonitis.

Ochsner advised us to avoid too early an incision of an indefinitely defined mass or impending abscess and advised against the removal of a deeply buried appendix when draining a walled-off appendiceal abscess. *If these dicta are generally accepted as the only indications for the Ochsner treatment, there can be little dispute amongst surgeons today about the value of this treatment in certain cases.*

Is cecostomy a prophylactic measure in perforative appendicitis? The logic of its performance is based upon the assumption that cases of appendicitis with fecal fistula do not die of peritonitis. Clinical experience has proven that there are non-surgical methods that are more effective than a prophylactic cecostomy in preventing postoperative distention and peritonitis. The added operation enhances the danger of breaking down defense barriers and causing peritoneal contamination. This operation can not prevent a paralytic ileus from developing, and is of doubtful value in treating a paralytic ileus because it is performed distal to the greatest distention.

Prophylaxis in Intestinal Surgery

PRE-OPERATIVE preparation of the patient, sulfonamide therapy and the adoption of aseptic methods of anastomosis are important factors in lowering the mortality of postoperative peritonitis.

Suture Insufficiency is a frequent cause of peritonitis. It may occur as the result of (a) suturing edematous bowel, (b) neglecting to maintain a blood supply at the suture line, (c) tension and torsion at the suture line, (d) use of drains down to the suture line, (e) gas-tension at the suture

line, (f) too early use of enemas post-operatively.

The migration of micro-organisms *through* the bowel wall and into the peritoneum, in cases where the circulation has been seriously compromised because of local distention, trauma or strangulation, is frequently overlooked as a cause of peritonitis. One must bear in mind that peritonitis may result from excessive manipulation of bowel that is the seat of chronic obstruction and inflammation.

The resection of devitalized bowel, followed by immediate anastomosis even though it be done aseptically, results in a forbidding mortality from peritonitis; whereas exteriorization of the bowel and subsequent resection considerably obviate this danger.

A high mortality from peritonitis follows the operative treatment of mechanical intestinal obstruction. A fatal peritoneal contamination may result from leakage while separating what appears to be an easily removable band or adhesion. It is not always leakage from the bowel that is the cause of the peritonitis; all too frequently micro-organisms are "squeezed through the bowel wall," so to speak, by the excessive manipulation that results from radical attempts to remove the mystical "toxic" contents of the obstructed bowel.

Non-surgical intervention by means of the Miller-Abbott tube in cases of incomplete obstruction has resulted in complete relief of symptoms in many instances. This procedure undoubtedly has limited the indications for enterostomy.

One must be aware of the dangers of non-surgical decompression by means of the Miller-Abbott tube whenever there is evidence of a complete mechanical obstruction, or when one suspects strangulation. This applies particularly to large bowel obstructions, because the great majority of these cases are closed-loop obstructions with impending strangulation.

Observance of an "aseptic" technique is desirable when a decompression enterostomy is performed.

Exteriorization is a valuable prophylactic measure against peritoneal contamination in cases of chronic obstruction of the bowel.

The Paralytic Ileus of Peritonitis

THE most effective prophylaxis against paralytic ileus lies in early removal of the focus of infection.

The paralytic ileus of peritonitis represents a refractory type of intestinal distention that is directly proportionate to the severity of the peritonitis. The degree of distention and its responsiveness to treatment are of prognostic import.

Drastic measures to stimulate intestinal motility in an effort to overcome distention are unnecessary and harmful in that they may convert a localizing peritonitis into a diffuse one. Hotz showed that the hypermotility of the bowel that follows splanchnic nerve resection causes a rapidly fatal outcome in experimental peritonitis.

Perhaps the desire to get rid of the distention in paralytic ileus at all costs, even at the expense of the patient's life, is based upon the fallacious assumption that toxins absorbed by the distended bowel are the cause of death. It has been shown time and again that absorption from distended intestine is inhibited or completely absent.

Any advance in the treatment of paralytic ileus will have to come, not from the use of drugs that promote hypermotility of healthy bowel, but from some successful attack upon the refractory atony of the bowel due to the toxic paralysis of the splanchnic capillaries.

The capillary stasis in the mucous membrane of the intestine, by causing a disturbance in the diffusion and re-absorption of blood-gases, is responsible for the gaseous distention. By means of inhalation of concentrated oxygen one is able to prevent the entrance of atmospheric nitrogen and effect a reduction of the gas-volume of nitrogen in the distended bowel.

The removal of gases and excessive intestinal secretions is favored by the early application of the Miller-Abbott tube.

The application of heat to the abdomen is of some value in relieving symptoms due to distention.

An enterostomy is never indicated in the treatment of paralytic ileus.

Considerable difficulty frequently arises when one must decide between a mechanical obstruction and multiple adhesive obstructions due to plastic exudate. This

latter condition usually responds to decompression by means of the Miller-Abbott tube (when applied early).

Parenteral administration of plasma is indicated because a diminution in blood plasma occurs in paralytic ileus.

Treatment of Intraperitoneal Inflammatory Accumulations

FREQUENTLY, especially in appendicitis, a palpable mass forms which may ultimately disappear. Too early an operation for a tumefaction of this kind may prove to be a hazardous undertaking. This type of case represents one of the two indications for the Ochsner treatment.

Careful observation usually permits the differentiation of an inflammatory accumulation from an abscess. The former will disappear without operation, or at least time will later permit operation with safety.

Wallace and Sargent showed that cases of appendicitis with a palpable mass treated conservatively, and operated later, had a mortality of 0.7 per cent. In a similar group of cases that were operated immediately there was a mortality of 7.9 per cent.

Treatment of Intraperitoneal Abscess

SURGICAL drainage of an intraperitoneal abscess should not be attempted until walling-off has occurred. This represents an indication for the Ochsner treatment. During the period of observation an abscess may disappear completely, or may rupture into a hollow viscus, or rarely into the peritoneal cavity.

An abscess that suddenly ruptures into the peritoneal cavity requires immediate surgical treatment. This complication can not always be avoided, but the fact remains that failure to observe the principles underlying the treatment of peritonitis may be responsible for this accident. The ability of a fibrin cofferdam to delimit a rapidly forming purulent exudate demands the utmost rest and an ill-advised enema or an intestinal stimulant may be responsible for the rupture of an abscess into the free peritoneal cavity. The fact that this accident occasionally occurs does not imply that every intraperitoneal abscess should be

incised immediately after the diagnosis has been made.

Careful observation should permit one to decide when an encapsulated abscess is ready for drainage. No attempt should be made to remove the original focus at the same time that drainage is instituted unless it can be readily done without breaking through the defense barriers. This represents another admonition of Ochsner. It is most important that *frequent rectal examinations* should be made during the period of observation of a suspected intraperitoneal abscess, especially that following a ruptured appendix.

It is generally agreed that the removal of an acutely inflamed appendix should not include exploration for evidence of pelvic peritonitis, nor should it include the promiscuous introduction of drains deep into the cul-de-sac to "prevent" abscess formation in the pelvis. It is a clinical fact that the appearance of a slight exudate at the time of operation for the removal of an early, acutely inflamed appendix, especially if it has not ruptured, does not necessarily mean that a pelvic peritonitis exists, and the introduction of a drain into the pelvis upon this evidence alone may favor rather than prevent the formation of a pelvic abscess.

Once a pelvic abscess has fully developed, its drainage through the rectum is usually easily accomplished. Oftentimes with a pelvic abscess there occurs some tumefaction above the symphysis, which is frequently responsible for the injudicious introduction of drains suprapubically; usually this tumefaction disappears after gravity drainage through the rectum is instituted.

The precautions to be observed when draining an abscess through the rectum are (a) open the abscess by means of a pointed forceps, (b) never introduce a drain, (c) never open the abscess unless there is uniform, mid-line fluctuation, (d) never open the abscess when in doubt, (e) never drain for one-sided bulging.

Use and Abuse of Drains in Appendicitis

DRAINS are used too frequently in the treatment of early acute appendicitis. If certain principles are applied to the use

of drains there should not only be a lessening of morbidity but an actual reduction in mortality. (1) The more firmly encapsulated the abscess is the more important becomes the indication for the use of a drain. (2) The thinner the exudate, especially in the early cases, the less likely is there to be encapsulation of the focus and the less likely is there need of a drain. (3) The thinner the exudate the more quickly a drain becomes extraperitonealized by fibrin. (4) A drain introduced beyond the encapsulation of a local peritonitis will contaminate non-infected peritoneum. (5) The protective fluid of the very early case does not require drainage. (6) Thick, foul, purulent exudate needs drainage. (7) Drains become more essential as the time interval between onset and operation increases, because encapsulation, which is the important indication for the use of drains, rarely is complete before 24 hours (Buchbinder showed that drains introduced in the presence of spreading peritonitis rapidly became encapsulated by fibrin, whereas in an encapsulated peritonitis the function of enclosing the drain with fibrin is lost). (8) A diffuse peritonitis is in reality a multilocular abscess and can not be adequately drained. (9) When draining an appendiceal abscess do not try to remove the appendix at the same time if its removal entails difficulties. (10) Secondary abscesses are frequent when drains are used for any condition other than an encapsulated peritonitis. (11) Residual abscesses result when drains are removed too early from deep abscesses. (12) Drains that come into contact with the small intestine are likely to produce a mechanical obstruction.

Fowler Position

IN THE supine position the lowest portions of the abdominal cavity are the cul-de-sac and the space behind the upper posterior aspect of the right lobe of the liver and the highest portion of the abdomen is represented by the central area due to the anterior curvature of the lumbar spine. Gravitation of infective contents into the pelvis by means of the Fowler position is of value only if it is applied

early, i.e., before fibrinous exudate has formed.

In the more advanced peritonitis the Fowler position may be harmful because it interferes with a splanchnic-venous-return that has already been embarrassed. It has been shown that gravity assists the venous-volume-return from organs above the level of the heart and interferes with the return from below that level.

Morphine

NORMALLY morphine increases intestinal tonus and stimulates the rhythmic segmentation movements. It would appear from this latter action that its use in the early stages of peritonitis would be contraindicated. However, this is not borne out by clinical experience, because morphine appears to be of most value in maintaining intestinal tone, especially when used before much distention from atony has occurred. It does not relieve distention in the more advanced paralytic ileus. Morphine apparently does not hasten death in experimental peritonitis.

The effect of morphine in slowing the respiratory force, and thus lessening the peritoneal absorption of toxins, is an indication for its use in the early stages of peritonitis.

Outside of assuring the patient some rest it is doubtful whether morphine has much value in the more advanced stages of peritonitis.

Treatment of Diffuse Peritonitis

WE ARE best protecting the well-being of our patient if we confine ourselves to non-surgical treatment. Irreparable harm may result from too much activity on our part; for example: an ill-advised laparotomy, the introduction of multiple drains, trying to remove the purulent exudate, irrigating the peritoneal cavity, enterostomy, etc.

The only measures that are indicated are: sulfonamides intravenously, Miller-Abbott tube, oxygen inhalations, morphine, heat to the abdomen, glucose solution to maintain liver function, normal saline solution to maintain the water and salt balance, and blood transfusions to overcome hypopro-

teinemia and to stimulate the defense factors.

Sulfonamides appear to be of definite value. Sulamyd, which is considered to be specific for colon bacillus infections, may prove to be of greatest value.

The intravenous administration of large doses of vitamin C may be of some value.

Cortin injections to maintain potassium balance and plasma to maintain the plasma balance are indicated.

Summary

I. The principles underlying the formation of a defense mechanism in peritonitis should be constantly kept in mind.

II. Early removal of the source of infection constitutes the most important single prophylactic measure against the development of peritonitis.

III. The turbid fluid of the very early case of peritoneal infection is protective in nature and does not require removal.

IV. The purulent exudate in diffuse peritonitis, because of its multilocular nature, can not be removed.

V. Factors that may cause the local peritonitis of appendicitis to become diffuse are:

- (1) Injudicious use of cathartics and enemas.
- (2) Delay in removal of the diseased appendix.
- (3) Poor surgical technic.
- (4) Immediate incision of every case with an inflammatory mass or abscess.
- (5) Drastic attempts to overcome distention.
- (6) Ill-advised right rectus incision.
- (7) Abuse of drains, especially in the early cases.
- (8) Failure to confine the operation to removal of the focus.

VI. Peritonitis following operations upon the bowel may be avoided when certain principles are observed, namely:

- (a) The causes of suture insufficiency must be borne in mind.
- (b) Aseptic methods of anastomosis should be used.
- (c) Operations should be performed in stages when dealing with chronic obstruction or perforation.

(d) Recognition that fatal peritoneal contamination can result from excessive manipulation of devitalized bowel.

VII. The sulfonamides, locally and parenterally, are of distinct value in cases of peritoneal contamination from bowel operations or otherwise.

VIII. The crux of the problem in treating paralytic ileus of peritonitis is the toxic paralysis of the splanchnic capillaries and the resultant atony of the intestinal musculature.

IX. Enterostomy is of no use in paralytic ileus. Enterostomy has been almost completely replaced by the Miller-Abbott tube. Multiple adhesive obstructions due to fibrinous exudate often respond to the early use of the Miller-Abbott tube.

X. An intraperitoneal abscess represents a superior defense mechanism and drainage should be established after it is definitely walled off. The results of drainage of pelvic abscesses through the rectum are especially gratifying.

XI. Drains are indicated in any encapsulated purulent exudate. Diffuse peritonitis can not be drained because the abscesses are multilocular.

The introduction of drains deeply into the pelvis when removing an early infected appendix is often poor surgical practice. Injudicious use of drains greatly increases the risk of contaminating "virgin" peritoneum and producing secondary abscesses and mechanical intestinal obstructions.

XII. In perforative appendicitis with peritonitis the avoidance of sutures in the wound, judicious use of drains and sulfonamide therapy are important procedures that definitely lessen the mortality.

XIII. There is no operative treatment for diffuse peritonitis.

- (a) Concentrated oxygen inhalations combined with the use of the Miller-Abbott tube are often effective in overcoming the distention of diffuse peritonitis when applied early.
- (b) Parenteral therapy to maintain salt and water balance is important.
- (c) Blood transfusions overcome the hypoproteinemia and plasma injection

- tions maintain the plasma balance.
- (d) The local and intravenous use of sulfonamides appears to be of definite value when used early.
 - (e) X-ray and vitamin C may prove to be helpful.
 - (f) Cortin overcomes the hyperpotass-

emia of distention.

- (g) The Fowler position is of greatest value in the treatment of the early case.
- (h) Morphine, when used early, is of value because it increases intestinal tone.



BACKACHE:

Its Gynecological Aspects

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BACKACHE, as seen by the gynecologist, is never of the acute lancinating type and is hardly ever sufficiently severe to put the patient to bed because of it.

The character of the pain is a dull heavy ache and frequently is not mentioned on the first visit. Usually it is brought out on direct questioning, the reason being that women consider it a part of their make-up like childbearing and menstruation, a curse wished on them because of the slip of Eve in the garden of Eden.

The condition is most common between the ages of thirty and fifty, the reason being self-explanatory.

I propose herewith a classification of backache of gynecologic origin based entirely upon my personal experience, as most textbooks on diseases of women pay

but small attention to this complaint.

1. Circulatory

One of the most frequent causes of backache is a pelvic congestion due to:

A. Coitus Interruptus

Whenever I see a blue, hot, non-pregnant cervix, I immediately get a confession of this practice. The same may be said of poorly timed ejaculation, robbing the wife of her orgasm. Either condition in the end results in permanent circulatory damage to cervix, uterus and ovaries.

B. Retroversion and Retroflexion of the Uterus

By interfering with the return circulation, they also cause chronic pelvic congestion producing a dull,

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heavy sacral pain which, if the uterus is movable, can easily be corrected by a pessary. And, if such relief is obtained, then, and then only, may one discuss the advisability of the different forms of suspension operation, of which I personally prefer the Gilliam.

C. Varicosities of the Broad Ligament
Diagnosed by palpation of the adnexa in recumbent and standing or semirecumbent position, when the veins empty and fill. The treatment, of course, is surgical.

2. Inflammatory

A. Parametritis Postica

A common finding following inflammatory disease of the lower pelvis, particularly the endocervix. The sacro-uterine ligaments are tender to the touch and the cervix cannot be moved without causing pain. There may be exudates in the cul-de-sac. Cauterization of the cervix; heat; foreign proteins. Mercury-filled bags in the vagina with the patient in the Trendelenburg position will give relief.

B. Other Infection

Other areas drained by the lymphatics toward the lumbar set of glands will give rise to the same symptoms. Infected hemorrhoids and cryptitis will do the same thing.

3. Conditions producing weight in the lower abdomen will cause sufficient backache to require relief

A. Pelvic Tumors

Benign and malignant, by pulling on all ligaments including the sacro-uterine will cause pain.

B. Pregnancy

Causes backache by change in posture. An individual without a load walks straight. One with a load on his back stoops forward. The pregnant woman, to overcome the weight in front, throws her dorsal spine backward, throwing her lumbar spine forward and causing a lordosis which, of course, is temporary.

C. Obesity

Obesity with a pendulous abdomen causes the same condition as a pregnancy.

4. Constitutional Causes

A. Congenital

We are all familiar with the tall, lanky, asthenic woman, who already has had a suspension, perhaps a nephropexy, and now has a return of her prolapse and relaxed pelvic outlet. These people are born atonic, they have a visceroptosis, they cannot eat or assimilate their food. On x-ray of the spine, one not infrequently finds a spina bifida occulta. What they need is proper corseting, rich carbohydrate diet and, if any repair is needed, it should be from below only. The Fothergill (Manchester) operation will shorten their cardinal ligaments, so the bladder and uterus will remain in the proper position.

B. Acquired Causes

Acquired causes mainly belong in the field of general medicine; the anemias, malnutrition and, possibly, postoperative backache due to the relaxation of the spine during anesthesia, and probably also due to biologic conditions brought about by the surgical procedure itself.

And Finally

5. Local Causes

Dr. Emil Reis of Chicago some time ago described a condition which he calls episacro-iliac lipoma. Lipomatous nodules in the region of the sacro-iliac joint which, when touched, cause extreme pain; when located the patient says, "that is it, Doctor." Complete relief can be had by excising the nodules and in some cases even by mere infiltration with novocaine.

In this brief review I could not possibly cover the subject in full. However, my experience has been that the conditions mentioned prove the most common factors in causing backache of gynecologic origin.
425 EAST WISCONSIN AVENUE.

CLINICAL NOTES

EFFECTIVE SYMPTOMATIC RELIEF OF FUNCTIONAL AND ORGANIC GASTRIC DISORDERS

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THE unhappy victim of a gastric disorder, be it functional or organic in nature, usually first presents himself at the physician's office because pyrosis, eructations, nausea, vomiting, epigastric distress or similar complaints have seriously hampered his accustomed digestive tranquility. In many such instances discovery of the actual cause of these symptoms is by no means immediate. Time is required, time for fluoroscopy, roentgenography, laboratory analyses, dietary experimentation, and the repeated examinations which are often necessary accurately to diagnose the offending pathology or functional derangement. Pending such diagnosis, pending such time as treatment can be intelligently directed to the cause of the trouble, the patient is entitled to symptomatic relief at least. As a matter of fact, from the patient's point of view, relief from his complaints is the only matter of immediate consequence and he will seek the physician who will see that this relief is satisfactorily obtained. As is

well known, the remedies are legion which singly and in combination have been proposed and employed for alleviating the frequently encountered gastric symptoms which are usually produced by the various gastro-intestinal disturbances. Gastric hyperacidity must be corrected, hypermotility must be calmed, pain must be completely banished, so far as possible.

IT is the purpose of this paper to report results frequently obtained through the use of a new preparation* which excellently and effectively achieves these objectives. A brief scrutiny of the formula of this product deservedly should be made at this point for its ingredients seem clearly to account for its effectiveness. Doubtless these capsules derive their name from two of the most effective of these. The first is Syntropan, a product with which many physicians are already familiar. Acting much like atropine, Syntropan inhibits gastric secretion and exerts a relaxing antispasmodic effect on the stomach musculature. According to Jones (1), "There is no doubt that antispasmodics prevent or ward off the

* Manufactured by Hoffmann-La Roche, Inc., Nutley, New Jersey, under the trade names of syntropan capsules and syntropan tablets.

recurrence of ulcer." The second ingredient referred to is an especially prepared colloidal aluminum hydroxide which neutralizes acid by adsorption. In discussing the use of colloidal aluminum hydroxide in the treatment of peptic ulcer, McIntosh and Sutherland (2) conclude that "Aluminum hydroxide has proved itself to be a highly effective antacid without danger of 'rebound' activity." These capsules also contain small amounts of calcium carbonate and bismuth subcarbonate. The calcium carbonate, an insoluble alkali, by neutralization aids in further reducing gastric hyperacidity but does not seem to provoke a compensatory alkalosis. According to Solis-Cohen (3), calcium carbonate is to be preferred in treating excessive gastric secretion, while Loevenhart and Crandall (4) in a review of ulcer therapy considered it the best antacid they had ever tried. Bismuth subcarbonate, of course, is an effective remedy in gastro-intestinal irritation. Oil of peppermint is included in the formula as a carminative. Incidentally, with 2 cc. of this substance by mouth, Sapoznik, Meyer and Necheles obtained markedly diminished acid secretion in the stomach, no change in the secretion of mucus, usually shortened emptying time and, in ulcer, relief of pain.

So much for the ingredients of these capsules. In the present study they have been used in twenty-five patients who complained of pyrosis, nausea or vomiting, epigastric distress, and belching. The following is a generalized report of these cases with results:

Ten cases of peptic ulcer:

Diagnosis was confirmed by x-ray in seven of these cases. Uniformly excellent results were obtained, with relief forthcoming almost immediately after the use of the capsules or within twenty-four hours after their use. All of these patients were given two capsules after meals, depending on the time at which symptoms appeared, and also were placed on a modified Sippy diet. The number of capsules was later reduced to one after meals.

Five patients with cardiac disorders complained of belching and pyrosis, a rather frequent finding in these patients and a

difficult symptom to overcome. They were all benefited with the exception of one who took medication for only one day.

Two patients having gallbladder disease were considerably improved by the use of these capsules.

Three patients who exhibited a menopausal syndrome, with belching, pyrosis, and nausea, were given the medication with fair results on the average. The same results were gotten in three cases of neurasthenia.

One patient who exhibited a generalized neuritis with a slight gastritis was relieved as well as one case of vomiting of pregnancy.

The following is a summary of the most interesting cases with treatment:

Peptic Ulcer:

G. W., 34 years. Male, married. Complained of belching and heartburn one-half hour after meals for three months. X-rays revealed a small crater-like ulcer of the greater curvature of the stomach. He was put on a modified Sippy diet and given two capsules one-half hour after meals; immediate relief was experienced. One week later the dose was cut down to one capsule and after a month the patient was maintained on diet alone.

J. N., 55 years. Male, married. History of belching and pyrosis one-half hour after meals and intermittent tarry stools for one year. X-rays revealed an ulcer of the greater curvature of the stomach near the pylorus. The diet was similar to that of the preceding case and the same routine was carried out with equally gratifying results.

I. C., 58 years. Male, married. History of belching, nausea, and heartburn one hour after meals, with melena one week. He was put on the same diet and medication except that the capsules were given one hour after meals. Relief was almost immediate. After a month of the capsules he was given a normal diet and has been symptom-free since.

M. E., 30 years. Male, married. History of belching, epigastric distress, nausea, and heartburn. X-rays revealed a duodenal ulcer. The same diet and capsules were given and after a month's treatment the patient was put on a normal diet and has been symptom-free since.

In summarizing the peptic ulcer cases, it is a very significant fact that these patients received almost immediate relief from their symptoms following administration of the capsules.

Cardiac:

Mrs. A. S., 82 years. Widow. History of hypertensive arteriosclerotic disease of about ten years' duration, with symptoms of pyrosis, belching, and epigastric cramps. She was put on a routine cardiac diet and a capsule given to her after meals and whenever necessary. The patient obtained relief after taking several capsules. When she stops taking them her symptoms return, so she has continued with them without any deleterious effects.

M. S., 71 years. Male, married. History of a coronary thrombosis one year ago and now complaining of belching and heartburn immediately after meals. Given two capsules after meals since it was found one did not give him relief. Has been taking the capsules only when needing them after two weeks' medication.

Gallbladder:

Mrs. J. M., 58 years. Married. History of gallbladder pathology for one year with pyrosis and belching after meals. Put on a gallbladder diet and still complained of the same symptoms. Then she was put on two capsules after meals. After two days' medication she experienced relief. At present she takes them as she needs them.

Menopausal:

Mrs. G. W., 45 years. Widow. Menopausal syndrome for the past two years. Has been under estrogenic therapy and was symptom-free of her complaints except belching and heartburn after meals. She was given two capsules after meals and after several doses experienced relief. At present she takes these capsules whenever she needs them.

Neurasthenia:

H. K., 29 years. Male, married. Neurasthenia definitely diagnosed and present for the past year with symptoms of belching and pyrosis. He was given two capsules after meals and allowed to take them whenever he needed them. Results were

fair, i.e., sometimes he experienced relief and at other times he did not.

Neuritis:

Mrs. R. B., 48 years. Widow. History of a polyneuritis for the past two months. Treated with extensive injections of thiamine chloride which stopped her pain but she continued to belch and have heartburn after her meals. She was given one capsule and then this was increased to two capsules when one capsule did not give her relief. At present she takes them after meals only when she needs them.

Pregnancy:

Mrs. G. J., 43 years. Married. Pregnancy of three months with a history of nausea and vomiting, pyrosis, and belching. She was given two capsules immediately after meals and occasionally one before meals if she needed one. After several doses she became symptom-free and did not have to take them for the remainder of the pregnancy.

Comment

THE current tendency among gastroenterologists to avoid the use of absorbable alkalies, which may affect systemic acid-base equilibrium, is quite reconcilable with the fact that the capsules used in this investigation contain aluminum hydroxide, which acts to reduce acidity by adsorbing rather than absorbing acid ions. The other ingredients of the capsule are medications ordinarily prescribed in gastric disorders. It seems scientifically desirable as well as convenient for both physician and patient to have all these medicaments combined in capsule form. Patients appreciate the ease of carrying the capsules about for use as directed or as necessary, the usual messy powders being unnecessary.

Summary and Conclusion

A VARIETY of patients who complained of pyrosis, belching, nausea or vomiting, and epigastric distress were treated with syntrogl. In all of these cases symptomatic relief was the object to be achieved.

It is worthy of note that all the patients with peptic ulcer invariably experienced

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MENTAL HYGIENE

CASE NOTES IN EXTRAMURAL PSYCHIATRY

CASE XV: MENTAL DEFICIENCY, IMBECILITY, IN AN ELEVEN-YEAR-OLD WHITE MALE

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Complaint Problem:

REFERRING physician recognized mental inadequacy and desired neuropsychiatric examination to evaluate facts and make recommendations to home and school. Mother states that her son cannot learn any further than second grade. "He is full of mischief. I think he is just playing on the teacher. I think he can learn. They say he is 'not just right'." Mother complains that the teacher gives him things to play with instead of giving him work to do. She also volunteered that her physician stated patient needed iron, and accordingly prescribed iron tablets. Moreover, mother states that he does not like to mind and consequently she has to do a lot of scolding. On the other hand, she remarked with some surprise and wonder that he minds his aunt "at the drop of a hat." "They say children are not afraid of their mothers."

Story of Present Difficulty:

SINCE entering public school at the age of five, first grade, it was recognized he did not learn "so good." He was slow in

comprehension. Accordingly, he repeated the first grade. He is now in the fifth grade for the first time.

There does not seem to be any improvement in the course of his difficulty. "He don't do a thing. He don't try. He listens, but can't learn the work. The boys say he can't learn and don't want to go to school. The teacher says he is real handy with his hands."

Sleep and appetite good. Yen for sweets. Weight within normal limits. Elimination habits satisfactory.

Personal History:

BORN in a local hospital, the youngest of five. Difficult gestation. "I didn't seem to have the strength to bear him." Birth, full term, natural. Weight, eight pounds. Difficulty in feeding first year; brought up on lactic acid and milk.

Developmental Data:

ACCORDING to mother, within normal range. For example: first tooth at six months; single words at twelve months;

walked at thirteen months.

Neurotic Traits:

EVINced in the form of fussiness over food. He always ran around a great deal, never seemed to be able to rest quietly.

Personality:

DESCRIBED as a good mixer, a happy child. Likes to tease mother. Not cruel to animals or children.

Past Illnesses:

NO operations. Suffered whooping cough and measles without sequelae. Frequent "colds."

Habits:

PREFERS to play with other children rather than by himself alone. Does not seem to know what to do if left to his own resources. Eats too much cake and candy. Regular elimination. No nocturia.

Home Environment:

PATIENT lives in a one-family house with his mother and three brothers and one sister. Mother separated from husband past four years; assisted in supporting family by relatives, although husband also contributes a small amount.

School:

ATTENDS a two-room village school. His strengths at school are handwork, evidenced in building and drawing; baseball, skating, swimming, and other play activities. On the liability side is his inability to do formal school work and his tendency to be disobedient to his mother.

Family History:

FATHER, aged 47, well, steam-shovel operator. Personality described as quick-tempered and restless. Claims he loves his children, but does not adequately support them. Eighth grade education.

Mother, aged 43. Suffers from arthritis, but is able to do her own work. Good-natured. Reached sixth grade in school. "I didn't like school. I wanted to work." She at first cared for babies and did housework

and later worked in a mill. States she is separated from her husband because they didn't get along well.

Siblings:

THREE brothers and one sister, the oldest being a brother, 19. He is a high school graduate and is learning machine work. His sister, 17, also a high school graduate. Another brother, 15, is in third-year high school. A brother, 13, is in sixth grade, but he also is unable to proceed at the normal rate at school. His mother stated that he did poorly until his teacher "kind of shamed him out of it this year. She wasn't going to pass him into the sixth grade but I told her Bobby (patient) would be going into the fifth grade, and so she passed him." Mother states that since this time he has been doing better, although he does not want to go to school, but would rather just play.

Paternal grandmother is said to have been "out of her mind" after an auto accident for some three years. It is also thought that certain of paternal relatives are "not right."

Physical and Neurological Examination:

PATIENT is a well-developed, fairly well-nourished, average-sized boy. Height, 4' 8 $\frac{3}{4}$ ". Weight, 72 pounds. Head circumference, 21 $\frac{1}{4}$ ".

Cranial nerves normal. Sensory and motor functions within normal limits. Tendon reflexes brisk. Vegetative nervous system normal.

Mental Examination:

A COOPERATIVE, well-mannered, neat, likeable boy. Somewhat bashful. Stream of thought connected, but no spontaneity. Objectively, mood is happy. Subjectively, no mood disturbance.

Content of thought does not reveal any abnormal trends, delusions, or hallucinations. I asked if he liked school. He replied that he enjoys drawing, geography. However, he wished that they would leave out English and spelling. His ambition is to be a trooper or a "cop." On further discussion he responded favorably to the suggestion of becoming a farmer, or perhaps a mechanic's helper.

Sensorium:

CLEAR. C.A., 11 years, 10 months; M.A., 8 years; range, 5-9 years; I.Q., 68.

Diagnosis:

MENTAL deficiency, imbecile, fairly stable type.

Prognosis:

FROM the formal academic standpoint this patient will be unable to graduate from the public grade school. However, he can be taught many useful skills and habits of work which can be of essential value in his employment as an unskilled laborer.

Treatment and Recommendations:

DURING the neuropsychiatric examination the mother was purposely retained in the examination room, in order to have her sense and accept patient's limitations with respect to certain of the examination reactions and findings. Especially in the Binet-Simon examination, the mother was impressed with the fact of her son's patent limitations. However, a sympathetic understanding and reassuring attitude was inculcated in her to the extent that Robert is a happy boy and reasonably well adjusted and could continue to be so. This depends upon his being adequately understood and managed, so that more is not expected of him than he could reasonably achieve within his limitations. It was pointed out to the mother that he should not be unfavorably compared with his brothers and sister of normal intelligence or with other children, especially with respect to school performance. Rather, he should be encouraged to beat his own score. Small gains should be appreciated as he will take a longer time to achieve the usual prescribed work, and that above the fourth grade level he will perhaps never be able to master. For this reason it is highly important that his strengths be recognized and developed. These revolve around his manual aptitude. Simple construction according to plan, and supervision, and art of a followership type can be of ego lift value in making him feel socially worth while because his efforts gain parental and

teacher and pupil approval. A large measure of recreational opportunities should be cultivated in order that he may shine in the things that he is able to do relatively better.

With respect to disobedience to his mother, it is important that she not make demands upon him that he is unable to measure up to. However, when a reasonable request is made, she should say it so as to show that she means what she says and follows through without patient evading the demand. It is equally important that she be consistent in her discipline. Trivial and insignificant or excessive demands upon him should not be made. Every opportunity should be capitalized in showing parental approval, praise, recognition, and reward for desirable performance. Habits of saving which have been neglected should be cultivated, even though it be on a very small scale. A weekly salary for prescribed assistance in chore assignments should be given, part of which should be placed in the school bank.

Since patient will have to live largely by virtue of good habit training in work, social adaptation, and biological functioning, it is highly important that he be sufficiently trained relative to regular and adequate eating, sleep, exercise, rest, relaxation, and elimination. Work habits should be carefully guided as his attention and concentration span is short and therefore his program will have to be variegated. Small doses of academic work, such as spelling, geography, and arithmetic, should be taught through the medium of concrete methods, using visual and manual aids as patient has very little capacity for reasoning, inference, or deduction. Practical application as it is related to everyday experience is important to give meaning and retention to content.

A letter was written to the family physician and also to the school principal in which patient's problems were analyzed and treatment formulations were made in keeping with their respective means to assist him. Robert should be seen periodically, in order that his 24-hour schedule of living should be shaped and his reactions guided in keeping with his assets and liabilities

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CULTURAL MEDICINE

ENGLISH LEADERS IN *Cardiology*

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HEART disease is a world problem. Disease has no boundaries. Not so dramatic as war, it is nevertheless a constant scene of battles lost and won. England has won many great battles against heart disease. It is with an appreciative sense of the past as well as of the present that we are privileged to recall in particular some of the great contributions which have come to us from England, and which have furnished a clearer conception of the nature and treatment of heart disease.

Many great discoveries and much factual knowledge about heart disease have come to America from England. American physicians who specialize in heart disease owe much to English leaders in cardiology. We humbly hope to complement that work in the future. Yet fully do we know that it "will take labor, patience, pain—and an infinite faith in the future."

Ever in time of war or peace must there be men able and ready to answer the siren call of the ambulance, the urgent call of sudden illness, or the daily need of the chronic invalid. That is home defense against disease, and it is not built in a day.

It is built century by century and is the continuous legacy of mind to mind, from East to West, North to South. The kind of world typified by England and America makes our work in heart disease possible. It is that kind of world the English are fighting for.

WHAT has England contributed to the conquest of heart disease? Consider the names of Harvey, Hales, Heberden, and Withering—high ranking English leaders of the last three centuries. Think of the moderns, such as Brunton, Broadbent, Mackenzie, and Osler, and the present-day Lewis. England blazed the trail from the seventeenth century. We followed her pioneering. We respect the stakes the English have claimed, the landmarks they have left in the evolution of a knowledge of heart disease. Last, but not least, they have taught us the use of the two important drugs in the treatment of heart disease, digitalis and nitroglycerin.

In the first place, take the fact of the circulation of the blood. This discovery was made by Harvey in 1615. Man's effort

to solve the riddles within his chest stretch across the centuries from Aristotle to ourselves, yet no name bears greater significance than that of HARVEY. The history of the study of heart disease reveals that men of ancient and medieval times had not alone great common sense and honesty of purpose, but as well a keen appreciation of the needs of the people of their time. The history of heart disease, like the history of language, follows the development of the human race in general. In the so-called "Dark Ages," the pre-scientific period, the circulation was considered with awe, and any cardiac ailment was thought to be due to some supernatural influence acting on the human body. We have left superstition behind; we have gone far in heart disease due in great part to the work that has been done by English leaders in cardiology. Today—though heart disease is a world problem—it is not considered hopeless.

HARVEY may well be considered the greatest man in the history of heart disease. While Harvey was a practical physician, he had received the full intellectual stimulus of the Elizabethan era. His name stands out in bold relief in the seventeenth century. He was thirty-eight when Shakespeare died. Sir Francis Bacon was his patient. He put the theory of the circulation of the blood in understandable form. His work was acceptable to science as the final solution of the flow of the blood. He dealt with facts, not with speculation. He popularized his discoveries, and with his demonstrations overcame religious opposition. His theory of the circulation of the blood was given to his pupils in England in 1615 when he was only thirty-seven years of age. His famous classic, "The motion of the Heart and Blood in Animals," was published in 1628 when he was fifty. He made delicate and careful observations on sixty species of animals; he made harmonious connection of the whole. He died at the ripe age of seventy-nine, and was buried in Hampstead Church.

Harvey was no less the philosopher than the scientist. Even today instruction on the physiology of the heart and circulation may still be based, and taught to our children,

on Harvey's seventeenth century discoveries. He was accurate, thorough, shrewd, keen, intuitive. He was a man of genius.

The name, HARVEY, is almost synonymous with heart.

WHO made the next English landmark in heart disease? Stephen Hales. He was born in 1677, twenty years after the death of Harvey. Hales was not a physician, but a clergyman, and evidently able to experiment with the bodies as well as the souls of the men of his generation. He was the first man to measure blood pressure. He did not hesitate to insert a tube into the bloodvessel of a horse, and he estimated the heights to which the blood rose in that tube during each beat of the heart. Read his brilliant study of blood pressure published in 1733 when he was fifty-six.

SO much for two English leaders, Harvey and Hales.

In 1710, thirty years after the birth of Hales, along came William Heberden, who gave us a description of the heart pain called angina pectoris. No finer description has ever been written right up to the present time. So accurate is it that this pain is often called "Heberden's angina." Yet he did this over two hundred years ago without benefit of modern scientific tools. Had Heberden not painted so graphic a picture of this heart pain, it is speculative whether the Sir Lauder Brunton of modern times would ever have perfected the use of one of the chief weapons against heart disease pain, nitroglycerin.

DIGITALIS, the most useful and important drug in the treatment of some types of heart disease, was discovered by an Englishman in 1785. This life-saving drug in heart disease was made useful by Withering. He was forty-four years of age when he wrote his famous "Account of the Fox-glove."

It has been related often enough, but the story never grows old. One fine day Withering heard of an herb concoction mixed by an old woman, which appeared to cure dropsy. She had kept her secret. (The doc-

tors at that time could not cure dropsy.) This old woman had been wandering on the hills of Shropshire picking herbs, one of which was digitalis. She took them home and brewed a tea, which seemed to cure dropsical conditions. Withering was asked his opinion on this so-called "family recipe." He went to work. He discovered that this tea contained no fewer than twenty different herbs, but digitalis was the prime ingredient. At that time, convinced of its beneficial effect, he indicated digitalis mainly for relief in dropsy, because then there was no distinction between dropsy of the kidney and dropsy due to a heart ailment. Richard Bright, who was born in England in 1789, later differentiated the one from the other.

So it was just a flower growing on an English hillside gathered by a medicine-woman that became the first great weapon against heart disease, and was first wielded by an Englishman. We owe our knowledge of digitalis to Withering.

HOW etched in our memories are the past achievements of Englishmen in the treatment of heart disease. It may well be asked, how have we kept these Englishmen so fresh in our memories? It is Sir William Osler who has kept the graves of these men so green. He was born in 1849 in Canada. In America in recent years we have made a byword of the "forgotten man;" Sir William has often made the "forgotten side" of a man come to life. He stimulated interest in the past in medical history and biography. He balanced; he did not inflate. He had literary ability. Few can follow in his footsteps. Sir William humanized the great masters of medicine, without vulgarizing them. He illuminated medical history. He believed that "history is simply the biography of the mind of man." He was eloquent spokesman of the *truly* great. As we have heard Mr. Churchill say of the R.A.F., on our radio, "Seldom, if ever, have so many owed so much to so few." Sir William emphasized this point in the contributions of the great medical minds to posterity; so many of these minds were English.

IT is always interesting to search for, and find, the source of the motivation of the mind of a man such as Osler. One of his chief inspirations was Sir Thomas Browne, contemporary of Harvey, born in 1605. Browne's contemplative philosophy and conceits have indeed charmed readers in every generation succeeding. Sir Thomas Browne, too, was a physician, and his book, "Religio Medici," has been rarely compared and analyzed by Sir William, with critical appreciation. He endeavored to hand down to students of the next generation a sense of the inspiration he himself received from such a classic. He felt, and many agree, that Sir Thomas might not have been of Harvey's rank as a scientific man, but Browne's was probably the most imaginative mind since Shakespeare.

Sydney Smith was born in 1771, in Winchester, England. He was not only a clergyman and author, but a man of great wit. Sir William Osler believed, with Sydney Smith, that "it is not the man who first says a thing, but it is he who says it so long, so loudly, and so clearly that he compels men to hear him—and it is to him that credit belongs." And if any worthy man did *not* "say it so long, so loudly and so clearly," Sir William has done it for him. Indeed, he deserves our thanks.

IT was a good two hundred years before the pain described by Heberden as angina pectoris was relieved by a remedy perfected by another eminent English student of the circulation. Sir Lauder Brunton was that man. He was a modern, and made intelligent use of the progressive trends of the past. He was really a research man, and endowed a number of laboratories. He discovered the drug nitroglycerin. What a gun nitroglycerin has proven to be in warding off pain in heart disease. Sir Lauder has surely added much to our knowledge of the physiology and pharmacology of the circulation. He was an echo of Harvey.

Sir William Henry Broadbent, who was born in 1855, was another London physician known to America for his work in heart disease problems. His books have been guideposts to a knowledge of the care of heart ailments.

So America feels that many great contributions to cardiology have come from the English side of the sea. We can say that the story of cardiology has been written around the English-speaking people. "Harley Street" also means "heart" to American colleagues.

Glancing back through the last forty years, it is apparent that it was about 1900 when physicians in America really began to appreciate the great work of Englishmen in heart ailments. Somehow in the years following the "Gay Nineties" Americans felt that English leaders in cardiology knew something about the heart that we here did not know. All admired their broad philosophy (so important in caring for heart sufferers), and we accepted, but could not always apply, their generalizations.

Yet once again that dignified English procession forging forward through the centuries moves on. We all know by name Sir James Mackenzie, who lived from 1853 to 1925. He came to be recognized as a leader the world over. Upon his death the world lost not only a great scientist, but also a very wise philosopher. I remember going to England as a young man with my family. My father, who is a heart specialist, took me to see his friend, Sir James Mackenzie. He was a sturdy man, and I was much impressed that at the age of seventy-two he could go around St. Andrew's golf course and play in the 80's! One of Mackenzie's greatest interests was in the early diagnosis of heart disease—before too much had gone wrong to make relief or prevention of further disease out of the question. He wrote several books on heart disease and further perfected the skilful use of our big gun, digitalis, in the treatment of a certain type of heart beat irregularity. He harkened to the aches and

pains of the heart sufferer. He did not consider anyone a "case." He helped. He infused new hope into those with handicapped hearts. Sir James Mackenzie may be considered without reservation one of the greatest heart specialists of modern times.

WHAT about the living? How do they compare? Sir Thomas Lewis surely ranks with the best of the leaders who have gone before. All of us here know and admire him. He has taught us so much about the electrical activity of the heart. He will have much to leave to posterity. His legacy to students of the circulation will be generous. His knowledge of heart disease by virtue of diagnoses, prognoses, and elucidation of cardiac neuroses is "an ever-present help in time of (heart) trouble." I have a copy of the 1918 edition of his "Soldier's Heart" which has been well thumbed by myself and others for the last two decades. The 1940 edition has arrived recently from England.

Valued friends in England are many of the younger students of cardiology, such men as Parkinson, Bach and Robinson. They, too, will surely contribute much toward perfecting the procedures of the past.

The net value of the development of heart disease information from 1615 to 1941 in leading to correct practice has been very great. This result was only possible by building on the foundational work of the master minds of former times, and much of this work was carried on in England.

The English believe that the kind of world in which men could do this kind of work is a world worth fighting for.

121 EAST SIXTIETH STREET.



MENTAL HYGIENE

—Concluded from page 512

and the immediate needs as they may arise.

Arrangements perhaps can be made to have Robert sent to a nearby city school where he can enjoy the advantages of special class teaching for the mentally retarded. This type of state-supervised setup restricts

the number of pupils to ten to twenty per teacher. The latter is especially qualified by virtue of additional education in this type of work. Moreover, special classroom facilities are available in which apparatus for developing mechanical aptitude and skills is to be found.

218 STATE STREET.

CONTEMPORARY PROGRESS

Tumor of the Brain Simulating Encephalitis

H. R. MER-
WARTH and E.
FEIRING (*Brook-
lyn Hospital Journal*,
3:221, October 1941) report a case in a girl sixteen years of age, who had intermittent attacks of headache and drowsiness, the first accompanied by fever; more recently she had developed an unsteady gait and dizziness, double vision, and slurring speech. The first lumbar puncture showed a high cell count; this with the history of initial fever accompanying headache and drowsiness suggested the diagnosis of encephalitis. The patient became progressively worse and died three months after the onset of symptoms. At autopsy a tumor of the pons was found, which was histologically a glioblastoma multiforme. Pontine tumors usually occur in children under eleven years of age; the onset of symptoms is variable—headache, weakness of one or more extremities, vomiting, unsteadiness of gait, or behavior changes "may initiate the illness." The clinical picture then shows "progressive involvement of structures within the brain stem," including cranial nerves and pyramidal and cerebellar "pathways;" signs of increased intracranial pressure are of common occurrence in these tumors. In the case reported the occur-



rence of fever at onset was unusual and justified the suspicion of an encephalitis; this was further suggested by the high cell count in the

spinal fluid, which is not a characteristic finding in pontine or other brain tumors. Too great emphasis should not be placed on a single abnormal laboratory finding without regard to the clinical course. Clinically, evidence of "steadily progressive involvement" of the brain stem structures indicates the presence of a tumor.

Effect of Nicotinic Acid and Related Substances on the Intracranial Blood Flow of Man

CHARLES B. ARING and his associates at the University of Cincinnati College of Medicine (*Archives of Neurology and Psychiatry*, 46:649, October 1941) report a study of the effect of nicotinic acid, quinine nicotinate and nicotinic acid amide on the cerebral blood flow in human subjects. The method employed for determining the cerebral blood flow was one recently devised in their laboratory and described elsewhere. It consists in "the measurement of the rate of cerebrospinal fluid displacement through a large lumbar puncture needle during sudden compression of the veins of the neck

for a few seconds." Studies were made when the subject was "as quiet and relaxed as possible." Nicotinic acid is known to dilate the blood vessels of the skin and probably also dilates those of the skeletal muscles. Nicotinic acid amide has "pellagra-curative" properties, but does not dilate the cutaneous blood vessels. Quinine nicotinate, a related drug, causes flushing of the skin, presumably dilating the blood vessels. In the studies reported, it was found that the administration of 20 to 50 mg. nicotinic acid intravenously caused a significant increase in the intracranial blood flow, which began shortly after the flushing of the skin and the feeling of warmth induced by the injection. The increase in intracranial blood flow persisted for some time after the disappearance of the cutaneous flushing. The injection of 42 mg. of quinine nicotinate caused a definite increase in intracranial blood flow, similar in type, but not so marked in degree. Neither of these drugs caused any significant change in arterial blood

pressure. Nicotinic acid amide, in doses of 50 to 75 mg. intravenously, caused no significant increase in intracranial blood flow, and no flushing of the skin. Since the increase in intracranial blood flow produced by nicotinic acid and quinine nicotinate occurs without any rise in the blood pressure, it is evident that these drugs have an active dilator effect on certain intracranial blood vessels, which "roughly parallels" their effect on the cutaneous vessels. Derivatives which do not cause flushing of the skin also do not increase the intracranial

blood flow. Since nicotinic acid amide is effective in the treatment of certain symptoms of pellagra although it does not have a vasodilator action, "it is probable that the relief of nervous manifestations of nicotinic acid deficiency does not depend on the dilator effect of this drug on the intracranial blood vessels."

Changes in the Brain in Pertussis With Convulsions

V. B. DOLGOPOL (*Archives of Neurology and Psychiatry*, 46:477, September 1941) reports a study of the pathologic changes in the brain in 15 patients who had pertussis with convulsions. None of these patients was over two years of age. The most frequent pathologic changes were edema (14 cases), eosinophilic cellular degeneration (13 cases), multiple petechiae in the brain (12 cases) and lymphocytic plugs in veins and capillaries (11 cases). In some cases the marginal edema in the white matter was so marked that it simulated "a narrow,

poorly defined zone of demyelination," but it was found that the myelin was intact in these zones. The eosinophilic (ischemic) cellular degeneration affected the pyramidal cells of the hippocampus most extensively and the Purkinje cells of the cerebellum; in some cases other areas were also affected. In one case several subarachnoid hemorrhages were the major pathologic change; these hemorrhages were superficial and did not compress the convolutions. The multiple petechial hemorrhages, seen in 12 cases, were perivascular and most frequent in the

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white matter. Perivascular demyelination was found in only one case; the demyelinated areas "corresponded to perivascular hemorrhages in which most red cells were hemolyzed." The findings in these cases, as well as the data collected from literature, indicate that the lesions in the brain in pertussis are not caused by direct action of the causative organism on the brain, or even by "a distant action of bacterial toxins." Such lesions as ischemic (eosinophilic) cellular degeneration and the presence of numerous lymphocytic plugs indicate, rather, "a circulatory pathogenesis." In only one of the author's series of cases, which showed perivascular demyelination, was the pathological picture similar to that of encephalitis such as occurs in several infectious diseases. In the author's opinion, therefore, the cerebral complications of pertussis should not be designated as pertussis encephalitis, but rather as "pertussis encephalopathy" as suggested by Jochims.

COMMENT.

This excellent article should be read in its entirety to be appreciated. The series—fifteen cases—is an unusually large one, which in itself is important. The reviewer was impressed with the high white cell counts, preponderantly lymphocytic, found in many of the cases, the counts in 2 cases reaching 125,000 and 150,000 cells. It was in the cases with high cell counts that the "lymphocytic plugs" in the cerebral veins were most conspicuous, although they were also found in instances where the counts were not so high.

Since observers have attributed some of the cerebral complications to the severe paroxysms of coughing, it is significant that in but one case was there a gross flat hemorrhage, and this was found over the occipital pole.

The term pertussis encephalopathy seems a judicious one.

H.R.M.

Estrogen Therapy in the Psychoses

C. C. BURLINGAME and M. B. PATTERSON (*Journal of Nervous and Mental Diseases*, 94:265, September 1941) report the use of estrogen in the treatment of 63 cases of involutional psychoses, 27 cases of manic-depressive psychoses, 26 cases of schizophrenia and a group of 23 "miscellaneous psychoses" in women. The estrogen was given by daily intramuscular injections

in the form of estradiol benzoate or estrone; the total dosage was not less than 50,000 R.U., usually 150,000 R.U. or more. The best results with this form of treatment were obtained in the "depressions" associated with the menopause. Of the 63 cases of involutional psychoses, 37 patients or 58.7 per cent showed definite improvement; 9 obtained complete remission; 14 marked remission permitting their discharge. Of the 27 cases of manic-depressive psychoses, 6, or 22.2 per cent, obtained complete remission, 5 were much improved, and 3 somewhat improved, giving some degree of improvement in 14 or 51.8 per cent. No definite improvement was obtained in cases of schizophrenia or in the miscellaneous group, even though associated with the menopause.

COMMENT.

The reviewer concurs with the observations detailed in this article. If we assume that the varied symptoms, physical and psychical, are the result of changes incident to the menopause, such beneficial results are to be expected. The improvement in the disturbing physical complaints, the tendency to produce natural sleep and the relief of the vague internal agitation associated with the depression are well worth estrogenic administration.

It should be emphasized that even though the patient recovers, the administration of the medication should be continued in reduced form, as otherwise there may be a return of the depressive symptoms.

H.R.M.

The Pathology of Early Arrested and Non-Paralytic Poliomyelitis

D. BODIAN and H. A. HOWE (*Bulletin of Johns Hopkins Hospital*, 69:135, August 1941) note that the existence of non-paralytic cases of poliomyelitis in man "cannot be questioned." A differentiation is made between the "abortive" type of poliomyelitis in which only systemic symptoms and no involvement of the nervous system occurs, and the "non-paralytic" type in which there is involvement of the nervous system but no paralysis. The existence of the "abortive" type can not be definitely proved in man, or in experimental animals showing a febrile reaction to inoculation with the poliomyelitis virus but no demonstrable lesions in the nervous system. The

diagnosis of "non-paralytic" poliomyelitis can be proved by histopathological examination of the central nervous system in animals who have been inoculated with the virus but have not become paralyzed. In the authors' study of pathological lesions of poliomyelitis in chimpanzees and rhesus monkeys, they have found that the involvement of the nervous system produced by the virus of poliomyelitis may be spontaneously arrested at any stage after the virus has invaded the nervous system. If this arrest takes place before paralysis develops, a non-paralytic type of poliomyelitis results. According to their findings, the "minimal degree" of pathological change in non-paralytic cases consists in the characteristic mesodermal-glia infiltrations and perivascular cuffing with a regional destruction of neurones, "at or near the site of entry of the virus into the central nervous system." The spinal cord is not necessarily involved in such cases; but the authors have never seen spinal cord changes without lesions in "the susceptible centers of the brain." The "maximal degree" of pathological change in non-paralytic poliomyelitis has been

found to be "practically equivalent" to that in the paralytic type. Many nerve cells in the spinal cord may be destroyed, and the absence of observable paralysis is to be attributed to the fact that "the distribution of the destroyed motor neurones is too scattered to involve a single functional muscle group sufficiently to produce clinically evident functional loss." Sometimes all the anterior horn cells are destroyed in one microscopic section, and in other sections, as close as 1 mm., these cells are intact.

COMMENT.

A very illuminating presentation of the pathological changes noted in "polio". The observations have been made in experimental animals only, but it suggests that such cases can occur in man. The authors make clear that it is the degree of involvement of the anterior horn cells which produces paralysis.

We are inclined to feel that we should still label as "abortive types" those cases which show a lymphocytosis in the cerebrospinal fluid without developing a paralysis. Also that it would be exceedingly difficult on clinical grounds to label a sporadic case as "polio" simply because of increased lymphocytic reaction in the cerebrospinal fluid without the development of paralysis of some sort.

H.R.M.



Inductopyrexia

G. M. THOMSON (*Edinburgh Medical Journal*, 48:629, September 1941) describes his method of fever therapy by electromagnetic induction by means of the Inductotherm Fever Cabinet. The inductotherm is a vacuum tube oscillator generating an alternating current with a frequency of approximately 12,000,000 cycles per second; this current is conducted through a well insulated cable coiled in a single elliptical coil and built into a mattress board in the cabinet; the rubber sponge mattress on which the patient lies is placed on this

mattress board. The cabinet is air-conditioned, so that the air temperature within it can be automatically controlled. When the desired body temperature has been induced by the electromagnetic apparatus it can usually be maintained at a level of 105 to 106.4° F. by regulating the atmospheric conditions in the cabinet. The patient lies on the mattress with his head outside; pulse rate, respiratory rate, rectal temperature and blood pressure are determined before the inductotherm is turned on. While the inductotherm is operating, the patient's pulse rate, respiratory rate and temperature are determined every fifteen minutes. The author has not found it necessary to determine the blood pressure frequently (every thirty minutes) in most cases; if there is any doubt as to cardiovascular disease, blood pressure is taken regularly; also it is advisable to determine blood pressure frequently during the first treatment of any patient; in subsequent treatments it is usu-

ally not necessary. In the first treatment, the inductotherm current is "cut off" when the patient's temperature is within 1° F. of the desired level, as the temperature often increases after cutting off the current. In later treatments, the current is not cut off until the patient's temperature has reached the level desired. If the patient's temperature cannot be maintained at the level by regulation of the temperature within the cabinet, the inductotherm may be turned on for five to fifteen minutes to either full or partial intensity. During treatment, the patient is carefully watched; plenty of fluid is given; the fluids generally preferred by patients are glucose with orange and plain water; patients who complain of a feeling of exhaustion are benefited by 0.9 per cent sodium chloride solution with 6 per cent glucose, followed by "a mouthful of cold water to rinse the mouth." Some patients require sedatives. Both the patient's body and the head and face are frequently dried, as perspiration occurs freely; some patients enjoy having air blown over the face from an electric fan at frequent intervals; others prefer cold compresses on the forehead. While the inductotherm is operating, the patient is instructed to lie flat on his back with his legs stretched out; after the current is turned off, he is allowed to assume any position that he finds comfortable. The following symptoms indicate that treatment should be stopped: A pulse rate over 160 per minute; a systolic blood pressure below 80 mm. mercury; a rectal temperature over 107.5° F.; a respiratory rate over 40 per minute, or Cheyne-Stokes respiration; "violent" delirium, coma, or generalized tremor. The author has used the inductotherm chiefly for the treatment of gonorrhea and syphilis and their complications, and also for lymphogranuloma inguinale. Inductopyrexia may also be used in the treatment of chorea, rheumatoid arthritis, undulant fever, thrombo-angiitis obliterans, asthma, and disseminated sclerosis. The temperature level, duration and frequency of treatments vary with each type of case. Before beginning fever therapy, each patient is given a thorough physical examination; treatment

is contraindicated for patients showing gross cardiac, renal or pulmonary disease.

COMMENT.

A magnetic inductor connected with an apparatus of ultra high frequency for the creation of artificial fever has been used in this country for quite a few years. The term "inductopyrexia" is coined from the trade name of an apparatus made by a certain manufacturer. This does not infer any particular superiority of technic over others for the production of artificial fever.

In this commentator's opinion this method is not so safe as when fever is induced without the patient being placed in an electrostatic or electromagnetic field because it prevents the use of a continuous reading and recording electrical rectal thermometer.

The author of this article fails to mention the importance of high humidity in the air-conditioned cabinet. High humidity lessens the saline and fluid loss during the treatment.

As the journal in which this article was published is not easily accessible for reference to read up on this technic, it is suggested that the writings of Neyman of Chicago be consulted.

N.E.T.

The Effect of Infra-red Irradiation On Cutaneous Temperatures

E. C. ELKINS and Charles Sheard (*Archives of Physical Therapy*, 22:476, August 1941) report a study of the effect of infra-red irradiation on cutaneous temperature. All experiments were carried out in a constant temperature room; the subjects were young, normal persons, who had been in the constant temperature room for sixty to ninety minutes before the experiments were begun. The findings indicate that heat lamps should usually be applied at shorter distances than is customary. They are most effective in raising skin temperature when at a distance of 14 to 18 inches (36 to 46 cm.) from the part treated. Most sources of infra-red irradiation can be used at such distances; in some diseases with diminished peripheral blood circulation it may not be possible to use lamps at quite such short distances. It was also found that the maximum temperature level is not reached until the end of twenty minutes, and the temperature does not "level off" until at about thirty minutes. This indicates that irradiation should be continued

for more than "the customary fifteen or twenty minutes." If the lamp and the part to be treated are covered or "shielded," the cutaneous temperatures are raised as much as 3° to 5° C. (5.4° to 9° F.) above those obtained without "shielding." The cutaneous temperature also can be maintained at a higher level if the part treated is immediately covered with a blanket after irradiation is stopped. Evidence was obtained which indicates that with repeated treatments, increased tolerance to heat develops and cutaneous temperatures remain at a lower level, although more heat is applied. This is explained as due to the development of greater vasodilatation and hence more dissipation of heat as treatments are repeated; if this is so, the distance between the source of the rays and the part treated should be decreased as the number of treatments is increased.

COMMENT.

This study is interesting if one should desire to use phototherapy purely as a counter-irritant. Physical therapists for years have realized that the best physiological results are obtained not from heating the skin but by causing a quantity of light energy to penetrate beneath the skin and to be stopped there, causing the generation of deep heat. Light energy, when it is stopped, if not reflected is completely transformed into heat. Therefore the greater subdermal illumination that is caused, the greater will be the amount of subcutaneous heat.

It is with great doubt that the commentator reads the recommendation to treat patients at a 14 to 18 inch skin-bulb distance for periods longer than 20 minutes. If the customary 350 watt bulb is used such technic would undoubtedly cause blistering. Experimentally it may be all right but clinically it is too risky.

If the skin is covered or shielded, most of the light energy will fail to get beneath the skin and probably better results would be obtained if this shielded part were rubbed with a hot iron as was customary years ago when pains were "ironed out" with red flannel on the skin. Phototherapy when clinically applied should never be applied with anything on the skin.

N.E.T.

Methods of Applying Heat Locally in General Practice

F. H. Krusen (*Archives of Physical Therapy*, 22:531, September 1941) states

that heat for local treatment may be applied by conduction, convection or conversion. Conductive heating is carried out by direct application of "a warm object" to the part to be treated; conductive heating devices include those heated by hot air, hot water, chemicals and electric resistance coils. Conductive heat may also be applied by heated solids and semisolids; the local application of hot paraffin is one of the most useful methods of this type. Convective heat is applied by means of the visible and infra-red rays of the electromagnetic spectrum. It has been found that luminous sources of the infra-red rays are more effective than the nonluminous or "black body" radiators for convective heating. The action of conductive or convective heating is superficial, but it produces a rise of temperature of a considerable volume of blood in the cutaneous capillaries. Treatments with hot air chambers and blowers are recommended in various forms of arthritis. A vaginal applicator heated by circulating hot air and also the Elliott apparatus in which hot water circulates in a dilatable rubber bag that is placed in the vagina have been employed in pelvic infections. Ordinary electric heating pads are not recommended by the author "unless more suitable methods of heating are not available." Electrically heated pads or sleeves and cuffs that have "accurate control" are employed in the treatment of peripheral vascular diseases, arthritis and traumatic lesions. Hot paraffin applications may be employed in contractures, arthritis, fibrositis and for stiff joints following trauma. Infra-red radiation produces "not a passive congestion but an active hyperemia with an increase in the volume of blood flowing through the region;" it, therefore, tends to facilitate absorption of exudates. Local treatment with infra-red radiation has been employed in many traumatic conditions, in neuritis, myositis, fibrositis and arthritis, and in circulatory diseases. In such cases various conductive methods of healing may be substituted for infra-red radiation, if more convenient. In the application of any form of heat, the greatest danger is that of burns. Patients must be instructed that they should feel only "comfortable warmth," and should notify the attendant if they feel any

discomfort. "Extreme caution" should be used in the application of heat to extremities with impaired circulation, as in peripheral vascular disease; in such cases heat is disseminated poorly and burns are more liable to occur; this also applies to the treatment of old scars which are "comparatively avascular."

COMMENT.

Clinical experience has shown that convective heat is much easier to apply and is more efficient than conductive heat. The combination of visible and infra-red rays as obtained from the modern electric light bulb is the best method of causing subdermal illumination which results in the formation of heat in the tissues beneath the skin. If it were not possible to transilluminate tissues, the commentator would agree with the writer that convective heat is superficial.

N.E.T.

Twelve Year Review of X-ray Therapy in Gas Gangrene

J. F. KELLY and D. A. DOWELL (*Radiology*, 37:421, October 1941) report the use of the x-rays in the treatment of gas gangrene for the last twelve years. In that period the authors have had 21 cases of gas gangrene, in their own practice, which were treated with the x-rays; the mortality was 19 per cent. They have also

seen in consultation and treated 31 cases from the Omaha (Neb.) region, with a mortality of 12.9 per cent; and another series of 240 cases from other sources with a mortality of 11.6 per cent. Cases reported by others in the literature include 37 cases reported in detail with a mortality of 10.8 per cent, and 35 cases in which the use of x-ray in treatment is noted, with a mortality of 5.7 per cent. X-rays have also been used prophylactically in cases of injury when there was danger of gas gangrene with good results. On the basis of their own results and those reported in literature, the authors conclude that x-ray treatment has markedly reduced the mortality of gas gangrene and has rendered the use of serum unnecessary. It has also eliminated the need of extensive surgery in "the acute invasive stage." Any surgical procedure that is indicated by the injury or the initial disease should be carried out, but no surgery for the treatment of the gas bacillus infection *per se*, except occasionally a few incisions to relieve local tension caused by deep gas pockets or collections of serum. X-ray treatment should be given as early as possible in gas bacillus infection, but it will "cure many cases in the late stages."



Industrial Manganese Poisoning

R. H. FLINN, P. A. NEAL and W. B. FULTON (*Journal of Industrial Hygiene and Toxicology*, 23:374, October 1941) report a study of 50 men employed in a manganese ore-crushing plant; of these 34 were working or recently had been working where they were exposed to dust containing a high percentage of manganese; 16 had had no known exposure to manganese. Of the 34 men who had had a manganese exposure, 8 were disabled and were not working at the time of the examination. Of the

group of 34 men exposed to manganese, 11 were found to have manganese poisoning, including the 8 who were disabled. The most common symptoms in the 11 cases of manganese poisoning were lassitude, drowsiness, tremor of body or extremities, disturbances of gait, muscular weakness and cramps, disturbances of speech (8 cases), metallic taste, vertigo, paresthesia and palpitation. The blood picture in this group showed a low white cell count—averaging 5,380; as a rule the leukopenia became more pronounced as the disease progressed; no significant changes were noted in the red cell count. All the 11 workers in this group, and 16 of the remaining 23 workers exposed to manganese but not showing symptoms of manganese poisoning, had measurable amounts of manganese in the urine. None of these workers, whether showing symptoms of manganese poisoning or not, showed any definite evidence of

kidney damage. The neurological examination in the 11 workers with manganese poisoning showed evidence of extrapyramidal involvement of the central nervous system including the basal ganglia; disturbances of gait and speech were "the most outstanding findings." From a study of the concentration of manganese in the dust to which the workers were exposed in relation to length of employment, it is concluded that the proportion of workers developing symptoms of manganese poisoning increases with increasing atmospheric concentration of manganese and with increasing length of employment. The concentration of manganese can be reduced to 6 mg. or less per cubic meter in the dustiest operation in a manganese ore-crushing material by the proper dust-control equipment; these studies indicate that this is below the level at which there is danger of manganese poisoning among these exposed to the dust. The authors suggest that workers exposed to manganese dust be given quarterly physical examinations, and that if any workers develop symptoms such as drowsiness, languor, muscular cramps or twitchings, they should be transferred to "a manganese-free environment" until the dust hazard is controlled, and then kept under close observation.

COMMENT.

With the widespread increase in industrial activities incident to the defense effort in this country, such studies as the one noted here are very timely. Particularly pertinent is the suggestion of the authors that persons engaged in hazardous occupations should be given frequent physical examinations in order to discover early cases of industrial disease.

F.L.M.

Epidemiology and Laboratory Diagnosis of Infectious Jaundice

J. G. MOLNER and J. A. KASPER (*American Journal of Public Health*, 31: 945, September 1941) report that during the past two and a half years, 13 cases of Weil's disease have been recognized in Detroit. The causative organism of Weil's disease is found only where there are rats, as these animals are the chief vectors. Dogs may act as vectors of the true Weil's strain as well as of another species of *Leptospira*

(*Leptospira canicola*). In the Detroit investigations one case was found (in a child) which was apparently of dog origin. The disease may be acquired from infected water. In 3 of the Detroit cases studied by the authors, the infection was probably acquired from water, but in no case from swimming. Six cases occurred among poultry workers—strippers, graders and inspectors. There are usually many rats in such establishments, and the workers frequently have minor cuts and abrasions, through which the infecting agent enters. Two cases, both fatal, occurred in persons who were trapping and handling rats. The number of cases reported does not represent the true incidence of the disease. Laboratory procedures are necessary for diagnosis, the most useful of which is the agglutination test; as the disease may be caused by serologically different strains of *Leptospira*, more than one strain must be used for the test. The authors have found that one of the greatest difficulties is maintaining suitable cultures of the *Leptospira*. In the Detroit Public Health Laboratories it was found that the city tap water was not suitable for preparing the culture medium. The water giving the best results for the preparation of the medium was water that was collected as it drained down the side of a clay bank near the laboratory after a heavy rainfall; this water was filtered twice through coarse paper and was still slightly turbid. Other laboratory procedures for the diagnosis of Weil's disease include inoculation of young guinea pigs and examination of blood and urine by dark ground illumination. In the rare fatal cases, tissues from the liver, kidney and spleen should be used for animal inoculation, culture and microscopical examination.

COMMENT.

While the incidence of Weil's Disease is not, comparatively speaking, very high in the United States, it is to be noted that the infection presents a distinct hazard to persons engaged in certain occupations. The improvement and more wide availability of laboratory diagnostic facilities is desirable in order that more careful investigation may be made in cases presenting the symptom of jaundice when the etiology is obscure.

F.L.M.

A Tuberculosis Control Problem

R. E. PLUNKETT, JR. and W. J. TIFFANY (*American Journal of Public Health*, 31:769, August 1941) state that recent studies have shown that the incidence of tuberculosis is higher in institutions for mental diseases and schools for mental defectives in New York State than in the general population. The average death rate from tuberculosis in such institutions for three years (1937-1939) was 614 per 100,000, as compared with 51 per 100,000 for New York State. In a recent x-ray study of 1000 patients in the Binghantown State Hospital "previously unrecognized, clinically significant tuberculosis" was found in 4.7 per cent. At Willard State Hospital a study of 3176 patients showed roentgenological evidence of reinfection tuberculosis in 9.7 per cent.; the disease was active in more than one-third of this group; follow-up x-ray studies of 2,414 of these patients twelve to eighteen months later showed that 15 new cases had developed in this period. The study in this hospital also included 794 employees; reinfection tuberculosis was demonstrated roentgenologically in 27; the disease was "clinically significant" in 11 instances. A follow-up a year later showed 4 new cases of tuberculosis in this group of employees. In the past few years the seriousness of the tuberculosis problem in the institutions for the care of mental diseases has been recognized by the State Department of Health, but the cost of providing adequate x-ray service has prevented the development of a satisfactory tuberculosis control plan in all institutions. Accordingly the recent development of small films for photographing images on the fluorescent screen has been studied with a view to its use in state institutions for the diagnosis of tuberculosis in large groups. These studies have shown that 4 x 5 in. films are satisfactory for this purpose and their cost is approximately one-tenth that of the larger films. The plan for tuberculosis control in New York State Institutions for the mentally diseased and defective, based on the use of these small films, as now in operation, includes x-ray examination of all inmates and of employ-

ees; segregation of all inmates with tuberculosis in special wards; examination of all new admissions by x-ray alone or tuberculin tests followed by x-ray examination of the positive reactors; reexamination of all inmates at the end of a year; study of "the clinical status" of employees to determine whether or not they need care in state or county tuberculosis hospitals; preemployment examination of all new employees; x-ray examination every six months for employees giving "direct service" to inmates and every three months for employees in tuberculosis wards. In carrying out this plan, fully satisfactory control measures cannot be instituted until the nature of the problem has been "precisely" determined. Control measures will be instituted, however, as cases are found.

COMMENT.

The authors have drawn attention to a state of affairs which without doubt exists in many of those institutions which are devoted to the care of mentally ill patients in this country. The need for better methods of control over these institutions is more apparent when we realize that under modern practice a considerable proportion of the inmates are returned to the general population.

In a recent comparative study of x-ray methods carried out by the senior author and his associates, it was demonstrated that the use of the 4" x 5" film was an efficient, low cost method for the screening out of cases which needed more elaborate study.

F.L.M.

Syphilis Among Selectees and Volunteers

R. A. VONDERLEHR and L. J. USILTON (*Journal of the American Medical Association*, 117:1350, October 18, 1941) report that in the physical examinations and routine serological blood tests of the first million selectees and volunteers called for classification under the Selective Service Act of 1940, the incidence of syphilis was 45.2 per 1000. The examining physicians noted clinical evidence of early syphilis and other signs of the disease in its later stages. In computing the incidence of syphilis, the relatively small number of serological tests reported as "doubtful" were considered to indicate syphilis. Preliminary reports from

State health departments indicate that "considerably more" than 10 per cent of the selectees found to have syphilis were under treatment at the time of their examination. The incidence of syphilis was determined by race and state. The highest incidence of syphilis among these one million selectees and volunteers was reported from Florida and South Carolina, with rates of 170.1 and 156 per 1000 respectively; the lowest rate, 5.8 per 1000, was reported from New Hampshire. Seven Southern States and the District of Columbia showed rates above 100 per 1000. In all states, the incidence of syphilis was higher for Negroes than for whites; for the country as a whole the rate was thirteen times greater for Negroes; in twenty states and the District of Columbia, it was more than ten times greater than that of the whites. A study was also made of the incidence of syphilis according to the size of the community; for cities with populations above 250,000, information is available for each city. This shows that Philadelphia has the highest rate, 41.7 per 1000, among cities of 1,000,000 population and over; Washington (D. C.), with a rate of 103.1 per 1000, the highest rate for cities of 500,000

to 1,000,000 population; and Atlanta (Ga.), with a rate of 162.5 per 1000, the highest rate for cities of 250,000 to 500,000. The authors note that the rates for the largest cities (1,000,000 and over) are definitely lower than those for the cities "of medium and small size." The low rates in the large cities "reflect the intensity of the campaign against syphilis" in these communities; while the high rates in the smaller cities show that the program for the control of syphilis "has not yet been prosecuted with sufficient vigor." The total rate for urban areas, 46.4 per 1000, is but little larger than that for rural areas, 42.2 per 1000. These figures are of value because in civilian treatment centers, it is often difficult to secure the accurate address of patients.

COMMENT.

A large sample of a certain age group of the male population has been surveyed for the incidence of syphilitic infection. The data well illustrate the wide variations in the racial and geographical distribution of the disease in this country. It is to be hoped that the statement that "considerably more" than 10 per cent were under treatment represents only a preliminary survey of the situation.

F.L.M.



Treatment of Herpetic Keratitis With Ether

B. KRONENBERG (*Archives of Ophthalmology*, 26:274, August 1941) reports the local application of ether in the treatment of 8 cases of herpetic keratitis. Before the application of the ether, any one of "the standard local anesthetics" is used to obtain local anesthesia. A cotton applicator is then dipped into the ether and applied quickly to all lesions. The author emphasizes that the ether container must be

held close to the patient so that the ether does not evaporate and the applicator is wet when applied to the lesions; the lesions must be "rubbed firmly" with the wet applicator. After the application of the ether atropine sulfate is instilled and a patch applied over the eye. This method of treatment causes no pain and no reaction. In the 8 cases treated, the number of applications required varied from one to ten; only one application was required to obtain healing in one case; two applications in 4 cases; three applications in 2 cases; in one ten applications were required because, although most of the lesions were healed, a few small vesicles remained open; in this case an application of tincture of iodine was finally employed because a single vesicle persisted.

COMMENT.

The number of local applications recom-

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mended for herpetic lesions of the cornea indicates that the ideal has not yet been found. The commentator is well satisfied with pure carbolic acid. The common error made is timidity in applying the remedy or making the applications too far apart.

R.I.L.

The Chemotherapy of Trachoma

A. R. McKELVIE, R. KIRK and H. J. HOLDER (*American Journal of Ophthalmology*, 24:1035, September 1941) report the use of sulfonamides in the treatment of trachoma at Khartoum in the Anglo-Egyptian Sudan. Three sulfonamides were employed; sulfanilamide, proseptasine (M. & B. 125) and sulfapyridine (M. & B. 693). No difference in the therapeutic result was observed. The dosage of sulfanilamide was one tablet (0.5 gm.) three times daily for adults for a maximum of twenty-one days; after a rest period, a further course of treatment may be given. With the other two compounds the daily dosage for adults was four tablets (2.0 gm.) given in doses of one tablet (0.5 gm.) every four hours, for fifteen to twenty-one days. Smaller doses were employed for children according to age. Toxic symptoms with this dosage were "almost negligible." These authors have found that sulfonamide therapy is most effective in those cases of trachoma in which there are "serious clinical symptoms;" the most satisfactory results were obtained in cases with corneal complications such as pannus and keratitis. In these cases such subjective symptoms as pain, lacrimation and photophobia were rapidly relieved; the corneal lesions regressed within a few weeks, the cornea becoming "perfectly clear" in some mild and early cases. Sulfonamide therapy was also usually effective in trachoma complicated by secondary infections. In "subclinical" cases of trachoma, in which vision is not affected and in which the condition is discovered only by careful examination, sulfonamide therapy was not effective in clearing up the infection, in the authors' experience. In the Sudan, where these results were obtained, the authors note that the infection may have been "endemic for centuries"; and their conclusions may not apply in other parts of the world.

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COMMENT.

The sulfonamide compounds have accomplished wonders in the control of this most serious and prolonged disease of the lids with secondary involvement of the cornea and loss of vision. The effort is now being made to find a method of using the drug without serious effects upon the patient. The local use of the remedy is also gaining favor and not only in trachoma.

R.I.L.

Ophthalmoscopically Visible Retinal Lesions in Chronic Glomerulonephritis

R. W. GRAHAM (*Archives of Ophthalmology*, 26:435, September 1941) reports a study of 56 cases of glomerulonephritis from the Mayo Clinic, in which diagnosis was confirmed by autopsy, and in which at least one ophthalmoscopic examination had been made during life at the Clinic. In 10 of these cases the ocular fundi remained normal until death; in 2 other cases the fundi were normal at the last ophthalmoscopic examination shortly before death, but a few hemorrhages had been noted previously. In 7 cases, including these 2, ophthalmoscopic examination had shown a few retinal hemorrhages; the hemorrhages in these cases were of the type often seen in cases of severe anemia and were considered to be due to the anemia associated with glomerulonephritis rather than to the renal lesion *per se*. In the remaining 39 cases, the ophthalmoscopic picture was characteristic of "the so-called albuminuric retinitis;" all these cases showed edema of the retina, cotton wool patches, hemorrhages and abnormalities in the retinal vessels; edema of the optic disk was also observed. In almost all these cases, the onset of the retinitis, as indicated by subjective disturbances in vision, had "been sufficiently abrupt to justify considering it as acute." This type of retinitis simulates closely that observed in primary hypertensive disease and in hypertensive toxemia of pregnancy, and the authors believe that it is angiospastic in origin and should be designated as "acute angiospastic retinitis" rather than as "albuminuric retinitis." In cases in which the retinitis had been present four to six weeks, partial or complete macular stars were present. In all the 39 cases,

the ophthalmoscopic examination showed generalized narrowing of the retinal arterioles, sometimes associated with localized angiospastic narrowing similar to, but of lesser degree than, that seen in the hypertensive toxemia of pregnancy. Demonstrable chronic sclerosis in the walls of the arterioles was found in only 8 cases; in 7 of these cases the ophthalmoscopic picture simulated that of malignant hypertension. This type of chronic sclerosis was found to be associated with a marked degree of sclerosis of the renal arterioles. The clinical history of these patients showed that the onset of retinitis of the angiospastic type without retinal sclerosis (such as was observed in 31 cases of this series) is "an extremely grave prognostic sign," as the mean duration of life after the onset of this type of retinitis "will be only four months."

COMMENT.

The finer details of retinal lesions in nephritis and hypertension have been carefully studied only in the last few years. It was thought that all of the details were known many years ago but we know now that important information regarding the patient's future can be obtained by intelligent study of the fundi. The Mayo clinic has done very good work in this particular matter.

R.I.L.

Monocular Myasthenia Gravis

M. T. MOORE (*Archives of Ophthalmology*, 26:619, October 1941) reports 2 cases in which unilateral ptosis was the chief presenting neurologic sign of myasthenia gravis. In the first cases the symptoms closely resembled those of tabes in an early stage. In the second case the extreme degree of ptosis with an associated diplopia and squint somewhat resembled organic paralysis of the oculomotor nerve. Neither of the patients showed the characteristic symptoms of myasthenia gravis, and the possibility of this condition had not been suspected by other examiners. The need for a suitable diagnostic test in the early stage of myasthenia gravis is evident. Some of the tests that have been used are not suitable when the presenting symptom is ptosis, or require "cumbersome laboratory apparatus." In the author's two cases the diagnosis was made on the basis of the

effect produced on the ptosis by the intramuscular injection of prostigmine methylsulfate; the solution employed was a 1:2000 solution of prostigmine with 1/150 gr. (0.4 mg.) of atropine sulfate. Such a solution of prostigmine had no effect on organic ptosis due to neurosyphilis, to an interpeduncular lesion or to polioencephalitis hemorrhagica superior, but in the 2 cases reported, the injection was followed within a few minutes by a measurable improvement in the ptosis, which was most marked in the second case. The author considers that the prostigmine test is of value for the differentiation of the "earliest signs" of myasthenia gravis from those of other conditions that simulate it.

COMMENT.

A very rare disease; therefore, the details of the treatment and diagnosis must be worked out by those in neurological clinics before they can be utilized by the practitioner.

R.I.L.

The Retina and Intra-ocular Tension During Prolonged Insulin Coma

A. GRALNICK (*American Journal of Ophthalmology*, 24:1174, October 1941) reports a study of the retina and intra-ocular tension in a case of prolonged insulin coma occurring during insulin therapy for a psychosis in a woman forty years old. The administration of glucose by mouth and intravenously failed to bring the patient out of coma which persisted ten days until death. Ophthalmoscopic examinations were negative during this period except that moderate dilatation of the retinal veins was noted on the last day of life. The retinae showed no hemorrhages, exudates or pigmentary changes; the optic discs were normal. The intra-ocular tension was low throughout the period of coma; it was slightly lower in the right than in the left eye; shortly before death the intra-ocular tension in the right eye fell to 9 mm. Hg and in the left eye to 11.4 mm. Hg. There was no relation between the intra-ocular tension and the blood pressure, as the diastolic pressure remained high until about eighteen hours before death when vascular collapse occurred; the intra-ocular tension did not

—Concluded on next page

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reach its lowest level until about an hour before death. No direct correlation was found between the intra-ocular tension and the spinal fluid pressure. The level of the blood sugar and the spinal fluid sugar also did not affect the intra-ocular tension. Autopsy showed that although there were marked pathological changes in the brain with involvement of both the vascular system and the nerve cells, there were very slight changes in the retina, which may have been post mortem in nature. The findings in regard to intra-ocular tension

support those of most investigators who have noted lowered intra-ocular tension in insulin coma of shorter duration. The condition of the retina in this case confirms the author's previous findings that insulin coma or insulin therapy does not affect the retina.

EDITORIALS

—Concluded from page 498

to characterize the new order that looms menacingly before us?

Truly, when misconduct becomes good conduct the confusion of today will be worse confounded. We shall then have wholly accepted the ideology which we now profess to be fighting.

CORRIGENDUM

As figures 2 and 3 appear in the réprints of Dr. Herbert C. Fett's article (August, 1941) on separation of the distal radial epiphysis. These reprints are now obtainable from the author.
Ed.

Fig. 2

M.G. 1-7-41 No reduction. Adjustment taking place with satisfactory alignment.

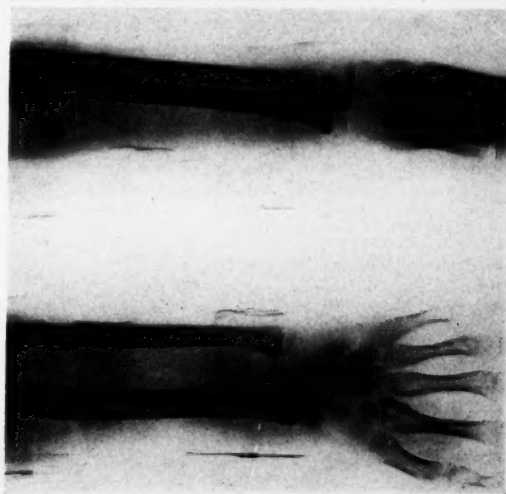
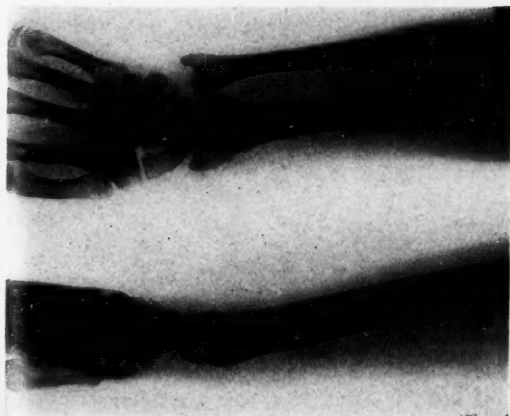


Fig. 3

A. DeS. 12-20-40 Separation of lower radial epiphysis with displacement and angulation.

GOOD BOOKS deserving your consideration

Van Alyea—NASAL SINUSES

An Anatomic and Clinical Consideration. By O. E. VAN ALYEA, M.D., Assistant Professor, Department of Laryngology, Rhinology, and Otolaryngology, University of Illinois College of Medicine, Chicago. Cloth, 6 x 9, 280 pages, 53 illustrations, 11 in color, \$6.50.

An entirely new and strikingly practical book of real value to all rhinologists and to all general practitioners who must deal with the perpetual stream of cases of sinus trouble. Based on the author's anatomic studies and clinical observations at the University of Illinois the book is deliberately limited to the discussion of subjects most likely to be interesting and helpful rather than attempt to cover every phase of sinus disease. Little space is given to malignancies, unusual conditions, or rare diseases. The many important problems in rhinology are discussed freely and all sides of controversial subjects presented as fairly as possible.

The author stresses anatomy and proceeds by clearly written text and particularly excellent illustrations through pathology and symptoms to diagnosis and sound up-to-date medical or surgical treatment. There are abundant references. The twelve chapters are: Histopathology—Acute Nasal Infection—Maxillary Sinus—Frontal Sinus—Frontal Cells—Ethmoid Sinus—Sphenoid Sinus—Sinus Disease in Children—Relation of the Sinuses to Other Organs—Other Complications and Benign Growths—Allergy—Surgical and Non-Surgical Therapeutic Measures. This last chapter includes: External Pansinus Operation—Proetz Treatment—Physical Therapy—Thermotherapy—Infra-red—Short Wave—Roentgen Therapy—Foreign Protein—Nasal Packs—Sulfanilamide—Reduced Atmospheric Pressure.

Walshe—DISEASES OF THE NERVOUS SYSTEM

By F. M. R. WALSH, O.B.E., M.D., F.R.C.P., Physician in Charge, Neurological Department, University College Hospital, London. Second edition, 1941. xvi + 325 pages, 32 illustrations, \$4.50.

Working under difficulties in the heart of bombed London this internationally famous British neurologist has managed to find time to revise and improve the very excellent short textbook first published only last year. That first edition won the enthusiastic approval of Dr. Stanley Cobb and many other leading teachers and practitioners of neurology and psychiatry as an ideal presentation for students and general practitioners. Dr. Cobb recommends study of this book concurrent with or following his own excellent introductory work, *FOUNDATIONS OF NEUROPSYCHIATRY* (\$2.50). The combination of either book provides a wonderfully strong foundation for students and a concise refreshing review for all practitioners.

Following valuable suggestions from teachers and others the author has made a number of changes and brief additions which necessitated forty more pages, with a few new illustrations. A brief statement of the tissue reactions of the nervous system has been added to Part I as well as some amplification of the sections dealing with the organization and symptomatology of the sensory, visual, and speech functions.

In Part II the chapter on intracranial tumor has been recast, pituitary diseases given fuller treatment, while additions have been made to the chapters on acute infections of the nervous system, head and spinal injuries, and lesions of the spinal nerves. All of which make the book more practically useful, especially in diagnosis.

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Medical

BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

The Saga of William Hallock Park

The Man Who Lived for Tomorrow. A Biography of William Hallock Park, M.D. By Wade W. Oliver, New York, E. P. Dutton & Company, [c. 1941]. 507 pages. 8vo. Cloth, \$3.75.

DR. OLIVER, a poet of parts when not immersed in intensely practical matters, has really written here an epic poem on man's ever more successful struggle for life and happiness through the victories of public health and laboratory medicine. It is in the line of the heroic sagas. We should like to see it dramatized for the screen—"The American Pasteur, or the Man Who Lived for Tomorrow"—with Paul Muni or Spencer Tracy in the title part and Kay Francis or Greer Garson as Dr. Anna Williams.

At the hands of Dr. Oliver, William Hallock Park emerges as a kind of Prospero of the laboratory. It is an engrossing story, as New York saw a

reduction in the annual

health. One gets a fascinating look into the methods of pure and applied medical science.

This book is a distinguished history of the evolution of public health work, in other words, of preventive medicine on a colossal municipal scale, and we should be very grateful for it. Oliver invests the Department of Health with a degree of glamour, distinction, romance even, and humane significance—a division of municipal administration which is revealed to be not basically bureaucratic, political, or heartless.

This is the legend of a perfect municipal servant. Under Park's aegis, in the fifteen years ending in 1933,



Classical Quotations

• She came in a few days after my return home and in six days I opened her side and extracted one of the ovaria which from its diseased and enlarged state weighed upwards of twenty pounds; the Intestines, as soon as an opening was made, ran out upon the table, remained out about thirty minutes and, being upon Christmas day, they became so cold that I thought proper to bathe them in tepid water previous to my replacing them; I then returned them, stitched up the wound, and she was perfectly well in twenty-five days.

Ephraim McDowell.

From a letter written to a medical student named Thompson about twenty years after the operation, which was performed December 25, 1809.

number of cases of diphtheria from 15,000 to 1,500, with a *pari passu* reduction in mortality. The diagnosis, control and prevention of communicable diseases was enormously advanced; it was total war against the enemy—slum-generated disease.

The list of references at the end of the book, concerned with Park's own contributions, reveals an amazing activity. They show unique, indeed supreme, ability to single out significant discoveries and make successful practical applications in his own great city on the largest possible scale, setting an example for cities everywhere in the world. Oliver brevets him as the greatest applier of sanitary bacteriology of his generation.

Nothing better has been done of its sort, with all details told as excitingly and interestingly as if a Fyodor Dostoyevsky held the pen.

ARTHUR C. JACOBSON

Disease in War Times

Fatal Partners: War and Disease. By Ralph H. Major, M.D. Garden City, Doubleday, Doran & Company, [c. 1941]. 342 pages, illustrated. 8vo. Cloth, \$3.50.

THE present World conflict makes this book of timely interest to the medical profession and the laity alike. It is written in an easy-flowing, historic style.

Starting with the Greek and Roman wars, it carries on through the Crusades, the gunpowder era, the European wars of the Middle Ages, thence to the Napoleonic conquests, to South Africa, and eventually to the World War of 1914-18.

Through this broad expanse of time, the part played by disease in its effect upon armies and its spread therefrom to civil areas is depicted. Despite modern knowledge of disease control in peace times, it is appalling to realize how, even 25 years ago, disease gets out of hand in concentrated masses of humanity such as armies provide. Furthermore, as the author states of the World War, "This war, with all its

modern trappings, showed the same age-old characteristics of war: it killed more civilians than soldiers." This book makes most interesting reading.

ALFRED E. SHIPLEY

Pediatric Surgery

Abdominal Surgery of Infancy and Childhood. By William E. Ladd, M.D., and Robert E. Gross, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 455 pages, illustrated. 8vo. Cloth, \$10.00.

PERHAPS the most potent influence in this country which has stimulated interest in surgical pediatrics as a collateral surgical entity has been that of Dr. Ladd. This, of course, should make his work a popular one. Because of

the author's wide experience in this particular field it has been possible for him to teach the subject in such a way that many infants' lives have been saved.

Over half of the chapters are devoted to congenital anomalies of the abdomen and the abdominal wall. The others have to do with inflammatory conditions, such as appendicitis, iliac adenitis, diseases of the spleen, gallbladder disease, et cetera. Physiology, anatomy, and embryology are discussed with each of the separate problems. Preoperative, operative, and postoperative care are treated in a most concise manner, making the text readable and easily understood. The chapters are well illustrated with black and white drawings, X-ray pictures and photographs.

We might add that this volume fills in an excellent manner a vacancy that has long existed in surgical texts of this country.

HERBERT T. WIKLE

Stories About Drugs

Magic in a Bottle. By Milton Silverman, Ph.D. New York, The Macmillan Company, [c. 1941]. 332 pages. 8vo. Cloth. \$2.50.

MMAGIC IN A BOTTLE presents the stories of ten drugs and of the scientists who discovered them. The narratives are written in a dynamic "de Kruif" style, which makes for pleasant reading.

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The book is recommended as interesting recreation.

GEORGE ROSEN

New Remedies

Modern Drugs in General Practice. By Ethel Brown-ing, M.D. Baltimore, Williams & Wilkins Com-pany, [c. 1940]. 236 pages. 8vo. Cloth, \$3.00.

THE author presents in compact form a commendable little book which covers much ground. There are nine chapters dealing with the sulphonamides, gold salts, cardiac drugs, drugs acting on the autonomic nervous system, sedatives and hypnotics, diuretics and urinary antiseptics, gastroin-testinal remedies including anthelmintics, and external applications including antiseptics disinfectants and local anesthetics. The importance of the group of drugs known generically as the sulphonamides is well emphasized. They represent, she states, "the greatest advance in the treatment of bacterial infections by specific chemical substances since Ehrlich's discovery of 606 in 1904." Special dietary measures in sulphonamide therapy are given to avoid sulf-hemoglobinemia which occurs when these drugs are given in the presence of excess sulfur in the blood due to foods rich in sulfur. The chief advance in gastrointestinal therapy, she points out, has been the introduction of the "new antacids" for the "old alkalies" preventing the production of systemic alkalosis. Those specially recom-mended are aluminum hydroxide and mag-nesium trisilicate, which have an acidity neutralizing action equal to the old alkalies but without diminishing the alkalie reserve. In like manner other modern drugs are dis-cussed as to their clinical indications, thera-peutic importance, their toxic action, and mode of use. The book is an excellent survey of the newer drugs and contains an extensive bibliography.

F. SCHROEDER

A Story Built Around Cancer

Man Without Uniform. By Willy Corsari. New York, Greenberg, [c. 1941]. 358 pages. 8vo. Cloth, \$2.50.

THIS book is a translation by S. L. Sal-zedo, and written originally in the Dutch language by Willy Corsari. It deals both in a narrative and biographical manner

with three themes, namely; the relation of God to science, euthanasia; and, the sacri-fice a physician makes to science.

At the outset it presents a youngster, in a small Dutch village, Remco de Raai who questions the contents of the Bible. He becomes very friendly with his family phy-sician, who ministers to the sick under ad-verse circumstances. When Dr. Jourems ob-tains a cure by an incision of a severe in-fection, the problem is raised whether it is the work of God or not. This efficient doctor is somewhat ostracized, on the other hand, because of his lack of interest in ex-isting religious conventions.

The youngster is inspired by his compan-ion. He becomes a physician himself, and devotes his life to cancer. He is con-fronted with the question of ending the suffering of incurable patients. He becomes very absorbed in his work, so that the usual interests of life do not appeal to him. His uncle, also a student of cancer is of the same type. The latter even while afflicted with a stroke continues in his studies. Remco neglects his immediate family, and later loses one of his children from a ne-glected ailment. His wife divorces him. However, he makes progress with research work in Japan, and also, at the laboratory of his uncle. He is acclaimed a great au-thority, and gains what he thinks is success. Unfortunately, he himself develops cancer, and is operated on. Metastatic nodules ap-pear, and he dies.

The characters in the novel are real and living. The book is dramatically written. In the course of events, murder, suicide, deaths, and illnesses are fully depicted. It is a sad novel which would interest particu-larly mature women. The medical phases elucidated in the book would make one sur-mise that the author was a member of the medical profession.

SAMUEL E. LAST

X-Ray Physics

Modern Physics of Roentgenology for Physicians, Pre-Medical Students, Students of Physics, X-Ray Engineers and X-Ray Technicians. By H. M. Mun-cheryan, M.Sc. Second edition. Los Angeles, Wetzel Publishing Company, [c. 1940]. 392 pages, illus-trated. 8vo. Cloth, \$6.00.

THIS is an excellent book thoroughly covering the entire field of roentgen

physics that should be of interest to the student and practitioner of roentgenology. The section on electrical phenomena in roentgenology is simply and thoroughly done, well within the mental reach of one interested in roentgenology. The fundamentals of radiation physics are well discussed, beginning with a discourse on properties of gases, thermionic transmission, and cathode rays. A generous portion of the book concerns itself with detailed information regarding the characteristic properties of x-rays, their production, measurement, and absorption.

The application of x-radiation to the roentgenogram is completely detailed in three readily readable chapters. Details regarding film processing are carefully included with suggestions for darkroom planning. The portion of the book dealing with roentgen therapy contains only a few general statements. This limits its value somewhat, but probably only to a relatively few readers.

JOHN PEPE

Preventive Phases of Polio

Infantile Paralysis Anterior Poliomyelitis. By Philip Lewin, M.D. Philadelphia, W. B. Saunders Company, [c. 1941]. 372 pages, illustrated. 8vo. Cloth, \$6.00.

THIS book brings up to date our knowledge on Infantile Paralysis. Although the author is an orthopedic surgeon, he covers the entire aspect of the disease, including etiology, epidemiology, and pathogenesis. We believe that he covers the subject thoroughly. It is the only book, at present, which includes all phases of the subject and completely covers the orthopedic aspects. Because of this it is valuable not only for the specialist, but also for the medical student and general practitioner. The value of the book is enhanced by the profuse use of illustrations.

JOSEPH B. L'EPISCOPO

Introduction to Electrocardiography

Essentials of Electrocardiography for the Student and Practitioner of Medicine. By Richard Ashman, Ph.D. and Edgar Hull, M.D. Second edition. New York, The Macmillan Company, [c. 1941]. 373 pages, illustrated. 8vo. Cloth, \$5.00.

THIS book may be looked upon as a primer in electrocardiography. The

theory of the subject is dealt with briefly, and normal and abnormal tracings are adequately covered. The description is simple and should be easily followed. The book is easy to read, and the electrocardiograms are well reproduced. For one desiring an introduction to electrocardiography it can be highly recommended.

J. HAMILTON CRAWFORD

Vade-Mecum on Bandaging

A Manual of Bandaging, Strapping and Splinting. By Augustus Thorndike, Jr., M.D. Philadelphia, Lea & Febiger, [c. 1941]. 144 pages, illustrated. 12mo. Paper, \$1.50.

AUGUSTUS THORNDIKE, who has wide experience at Harvard, has written a very useful, handy, and complete handbook on bandaging, splinting and strapping, extremely useful for medical students, nurses, and the young practitioner.

ANDREW M. BABEY

Health Education Programs

Community Organization for Health Education. A Committee Report Presented by The Committee on Community Organization for Health Education of the American Public Health Association to the Public Health Education Section and the Health Officers Section, New York, The Association, [c. 1941]. 120 pages. 8vo. Paper.

THIS is a report presented by the Committee on Community Organization for Health Education of the American Public Health Association.

The report is largely composed of a discussion of the programs for health education at present being carried out in certain selected counties, cities and states of this country and is of value to health officers and others interested in health education or related fields of endeavor.

FREDERICK L. MOORE

Bibliography on Bacteriology

The Anaerobic Bacteria and Their Activities in Nature and Disease. A Subject Bibliography. By L. S. McClung and Elizabeth McCoy. Supplement One—Literature for 1938 and 1939. Berkeley, University of California Press, [c. 1941]. 244 pages. 4to. Cloth, \$3.50.

THIS volume includes all references dealing with anaerobic bacteriology for the years 1938, 1939, and as far as possible for 1940. The material is organized under several headings which make for easy handling. To those interested in ana-

erobic bacteriology this contribution should be a welcome addition.

MORRIS L. RAKIETEN

Therapy of Play

Play for Convalescent Children in Hospitals and at Home. By Anne M. Smith. New York, A. S. Barnes & Company, [c. 1941]. 133 pages. 8vo. Cloth, \$1.60.

THIS book is a description of the result of six years experimenting with play for children convalescing in a hospital ward. The questions to be answered were:

What can be done with a full time, integrated program of play in a children's hospital? Will children respond favorably or are they too ill to care to play? Is play a vital factor in the care and treatment of children?

There are chapters on the value of traditional play activities in bringing out the full personality of the child. Then follows a discussion of the organization and administration of the department of play. Play with cardiacs,—with patients before their operation, the arts and crafts, and outdoor play are all analyzed. The balance of the book lists material needed for various types of play. There is also a bibliography of authors in relation to the previously discussed activities.

This book is of value to physicians interested in children's work, as well as to parents, social workers, and nurses.

STANLEY S. LAMM

Exploding Health Fallacies

Doctors Don't Believe It—Why Should You? Facts and Fallacies About Health with Practical Guidance for the Layman. By August A. Thomen, M.D. New York, Simon & Schuster, [c. 1941]. 384 pages. 8vo. Cloth, \$2.50.

HERE is a medical book for the layman which the most critical physician will not hesitate to recommend to his patients. Dr. Thomen gives the *coup de grace* to many commonly accepted fallacies regarding medical matters and adds sensible, yet highly personal, advice of his own.

There is much advice on subjects as widely diversified as chewing mashed potatoes and the selection of a wife, and they will be of corresponding importance to the reader. We can be thankful for the answer to question 249 on "Should two persons of similar psychological make-up marry?" A careful perusal of this section would resolve the doubts of many young people.

A word of praise is due the excellent format of the volume and the eye resting tinted paper provided by the publishers.

MILTON PLOTZ

BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

Lectures on War Neuroses. By T. A. Ross, M. D. Baltimore, Williams & Wilkins Company, [c. 1941]. 116 pages. 12 mo. Cloth, \$2.00.

Fit To Fly. A Medical Handbook for Fliers. By Malcolm C. Grow, M. D. and Harry G. Armstrong, M. D. New York, D. Appleton-Century Company, [c. 1941]. 387 pages, illustrated. 8vo. Cloth, \$2.50.

Leaders of Medicine. Biographical Sketches of Outstanding American and European Physicians. By Solomon R. Kagan, M. D. Boston, Medico-Historical Press, [c. 1941]. 176 pages. 8vo. Cloth, \$3.00.

Synopsis of the Preparation and Aftercare of Surgical Patients. By Hugh C. Ilgenritz, M. D. and Rawley M. Penick, Jr., M. D. St. Louis, C. V. Mosby Company, [c. 1941]. 532 pages, illustrated. 12mo. Cloth, \$5.00.

Your Heart. By Joseph M. Stein, M. D. New York, Alliance Book Corporation, [c. 1941]. 240 pages. 8vo. Cloth, \$2.75.

Unresting Cells. By R. W. Gerard, New York, Harper & Brothers, [c. 1940]. 439 pages, illustrated. 8vo. Cloth, \$3.00.

Hippocratic Medicine. Its Spirit and Method. By William A. Heidel. New York, Columbia University Press, [c. 1941]. 149 pages. 8vo. Cloth, \$2.00.

A Textbook of Bacteriology. By R. W. Fairbrother, M. D. Third edition. St. Louis, C. V. Mosby Company, [c. 1941]. 451 pages, illustrated. 8vo. Cloth, \$5.00.

Maternal Care. The Principles of Antepartum, Intrapartum, and Postpartum Care for the Practitioner of Obstetrics. Edited by F. L. Adair, M. D. Second edition. Chicago, University of Chicago Press, [c. 1941]. 92 pages. 8vo. Paper, \$60.

Maternal Care Complications. The Principles of Management of Some Serious Complications Arising during the Antepartum, Intrapartum, and Postpartum Periods. Edited by F. L. Adair, M. D. Second edition. Chicago, University of Chicago Press, [c. 1941]. 93 pages. 8vo. Paper, \$60.

Diseases of the Thyroid Gland. Presenting the Experience of More than Forty Years. By Arthur E. Hertzler, M. D. New York, Paul B. Hoeber, Inc., [c. 1941]. 670 pages, illustrated. 4to. Cloth, \$8.50.

The Public Health Nurse In Action. By Marguerite Wales, R. N. New York, The Macmillan Company, [c. 1941]. 437 pages. 8vo. Cloth, \$2.75.

Handbook of Laboratory Technic. Clinical and Diagnostic Interpretations of Routine Procedures. By Josephine M. Galloway, M. A. Philadelphia, F. A. Davis Company, [c. 1941]. 258 pages, illustrated 8vo. Cloth, \$3.00.

Diseases of the Veins and Lymphatics of the Lower Extremity. By C. H. Verovitz, M. D. Boston, Christopher Publishing House, [c. 1941]. 392 pages, illustrated. 8vo. Cloth, \$6.00.

Ontogeny and Such as Ioss. By Melcherd H. Kutch, M. D. Boston, Christopher Publishing House, [c. 1941]. 119 pages. 8vo. Cloth, \$1.50.

The Autonomic Nervous System. Anatomy, Physiology, and Surgical Application. By James C. White, M. D. and Reginald H. Smithwick, M. D. Second edition. New York, Macmillan Company, [c. 1941]. 469 pages, illustrated. 8vo. Cloth, \$6.75.

Symptoms In Diagnosis. By Jonathan C. Meakins, M. D. Boston, Little, Brown and Company, [c. 1941]. 323 pages, illustrated. 8vo. Cloth, \$4.00.

Occupational Diseases. Diagnosis, Medicolegal Aspects and Treatment. By Rutherford T. Johnstone, M. D. Philadelphia, W. B. Saunders Company, [c. 1941]. 558 pages, illustrated. 8vo. Cloth, \$7.50.

Medical Diseases of War. By Sir Arthur Hurst, M. A. Second edition. Baltimore, Williams & Wilkins Company, [c. 1941]. 427 pages, illustrated. 8vo. Cloth, \$5.50.

Diseases of the Blood and Atlas of Hematology. With Clinical and Hematologic Descriptions of the

Blood Diseases Including a Section on Technic and Terminology. By Roy R. Kracke, M. D. Second edition. Philadelphia, J. B. Lippincott Company, [c. 1941]. 692 pages, illustrated. 4to. Cloth, \$15.00.

From Cretin to Genius. By Dr. Serge Voronoff. New York, Alliance Book Corporation, [c. 1941]. 281 pages. 8vo. Cloth, \$2.75.

Pre-eclamptic and Eclamptic Toxemia of Pregnancy. By Lewis Dexter, M. D. and Soma Weiss, M. D. Boston, Little, Brown and Company, [c. 1941]. 415 pages, illustrated. 8vo. Cloth, \$5.00.

The Vitamin Content of Meat. By Harry A. Waisman, Ph.D. and C. A. Elvehjem, Ph.D. Minneapolis, Burgess Publishing Company, [c. 1941]. 210 pages. 4to. Paper, \$3.00.

Nutritional Deficiencies: Diagnosis and Treatment. By John B. Youmans, M. D. Philadelphia, J. B. Lippincott Company, [c. 1941]. 385 pages, illustrated. 8vo. Cloth, \$5.00.

Eye Hazards in Industry. Extent, Cause, and Means of Prevention. By Louis Resnick. Published for the National Society for the Prevention of Blindness. New York, Columbia University Press, [c. 1941]. 321 pages, illustrated. 8vo. Cloth, \$3.50.

Diseases of Women. By Harry S. Crossen, M. D. and Robert J. Crossen, M. D. Ninth edition. St. Louis, C. V. Mosby Company, [c. 1941]. 948 pages, illustrated. 4to. Cloth, \$12.50.

Infant Nutrition. A Textbook of Infant Feeding for Students and Practitioners of Medicine. By Williams M. Marriott, M. D. Revised by P. C. Jeans, M. D. Third edition. St. Louis, C. V. Mosby Company, [c. 1941]. 475 pages, illustrated. 8vo. Cloth, \$5.50.



CLINICAL NOTES

Relief in Gastric Disorders

—Concluded from page 509

almost immediate relief and continued to be relieved while taking the capsule and following a modified Sippy diet.

In the other cases the results were gratifying in that relief of symptoms occurred in a large percentage.

It is significant to repeat at this time that the best results were gotten in the cases of peptic ulcer, there being an almost complete relief of symptoms.

Note.—When the present study was conducted Syntrogel was available only in capsule form. Since that time, however, the preparation has been placed on the market in tablet form and the author has had considerable opportunity to observe the clinical effects of these tablets. It has been found that one Syntrogel tablet can replace one Syntrogel capsule in any dosage schedule. Furthermore, the tablets are generally superior to the capsules in that they are more convenient to administer and manifest more rapid and pronounced action.

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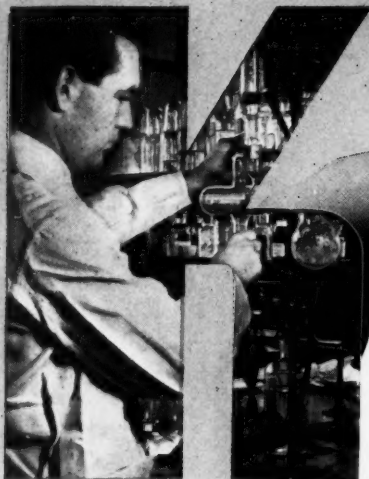
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Vol. 69

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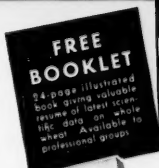


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